



205261

ATTACHMENT 7

Superfund Record of Decision:
Hagen Farm Superfund Site, WI
March 1991



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

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MAR 07 1991

REPLY TO ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Waste Management of Wisconsin, Inc.
c/o Ms. Anne Straw
Suite 1000
Two Westbrook Corporate Center
P.O. Box 7070
Westchester, Illinois 60154

RE: Hagen Farm Superfund Site
Dane County, Wisconsin

Dear Ms. Straw:

And ROD

Enclosed is a unilateral Administrative Order issued by the United States Environmental Protection Agency (U.S. EPA) under Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (CERCLA), 42 U.S.C. 9601, et seq.

Please note that the Effective Date of the Administrative Order (Order) is March 15, 1991. Also, please note that a conference has been scheduled for March 13, 1991, 10:00 am in the northwest corner conference room on the 11th floor, U.S. EPA Region V, 230 South Dearborn Street, Chicago, Illinois. The purpose of the meeting is to discuss the Administrative Order and its applicability to your company.

If you have any questions regarding the Order, please do not hesitate to contact Jae B. Lee, Remedial Project Manager, at (312) 886-4749, or Jeffrey A. Cahn, Assistant Regional Counsel, at (312) 886-6670.

Sincerely yours,

for Gadi Fraub
David A. Ullrich
Director, Waste Management Division

Enclosure

cc: (w/encl) P. Didier

DATE RECEIVED/SENT 3/8/91

BY: DEE BRNCICH

SITE Hagen Farm ES/RS

CC/ROUTE:

PK, DP, WS, HK, JD, GM, DO, AK, RO, AS

FILE SYSTEM: PROJECT/SITE

FILE CODE: 2.1 2.3 W/ATTACH

2.1 2.3 W/O ATTACH

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The following Administrative Order ("Order") is issued on this date to the Respondents pursuant to the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Section 9606(a), as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499 ("CERCLA"), and delegated to the U.S. Environmental Protection Agency ("U.S. EPA" or "Agency") by Executive Order No. 12580, January 23, 1987, 52 Federal Register 2923, and further delegated to the Regional Administrator by U.S. EPA Delegation No. 14-14-B, issued February 26, 1987, and further delegated to the Director of the Waste Management Division, Region V by Delegation No. 14-14-B, issued September 14, 1987. Pursuant to Section 106(a) of CERCLA, 42 U.S.C. Section 9606(a), notice of issuance of this Order has been given to the State of Wisconsin.

This Administrative Order requires the Respondents, and each of them, to undertake remedial action activities at the Hagen Farm site located in Dane County, Wisconsin, and described in greater detail below, (the "Facility"), to abate an imminent and substantial endangerment to the public health or welfare or the environment that may be presented by the release or threat of a release of hazardous substances present at the Facility.

II.

PARTIES BOUND

This Administrative Order applies to and is binding upon the Respondents, their successors and assigns. The Respondents shall provide a copy of this Administrative Order to each engineer or contractor hired to perform the work required by this Administrative Order. The Respondents shall also require that any contractor provide a copy of this Administrative Order to each subcontractor retained to perform any part of the work required by this Administrative Order.

III.

DEFINITIONS

Whenever the following terms are used in this Administrative Order or the Appendices attached hereto, the definitions specified in this Section shall apply:

A. "CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499.

B. "Engineer(s)" means the company or companies retained by the Respondents to prepare the plans and implement the remedial action required pursuant to this Administrative Order.

C. "Facility" means the "facility" as that term is defined at Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9), where disposal of hazardous substances was conducted; which Facility is located in Dane County, Wisconsin, and is known as the Hagen Farm Superfund Site.

D. "Hazardous substance" shall have the meaning provided in Section 101(14) of CERCLA, 42 U.S.C. Section 9601(14).

E. "WDNR" means the Wisconsin Department of Natural Resources.

F. "National Contingency Plan" shall be used as that term is used in Section 105 of CERCLA, 42 U.S.C. Section 9605.

G. "Operable Unit" as it applies to this Facility is a source control action for remediation of on-site wastes and contaminated sub-surface soils.

H. "Parties" means the United States of America and the Respondents.

I. "Record of Decision" or "ROD" means the U.S. EPA approved remedy selected to be implemented at the Facility, signed by the Regional Administrator of U.S. EPA, Region V, on September 17, 1990, concurred in by the State, and attached as Appendix I.

J. "Respondents" means Waste Management of Wisconsin, Incorporated ("WMI") and Uniroyal Plastics Company, Incorporated ("Uniroyal").

K. "Response Costs" means any costs incurred by U.S. EPA pursuant to 42 U.S.C. Sections 9601 et seq.

L. "Section 106 Administrative Record" means the Administrative Record which includes all documents considered or relied upon by U.S. EPA in preparation of this Administrative Order. The Section 106 Administrative Record Index is a listing of all documents included in the Section 106 Record, as set forth in Appendix II.

M. "State" means the State of Wisconsin.

N. "United States" means the United States of America.

O. "Work" means the activities to be undertaken by Respondents in accordance with this Administrative Order and appendices hereto.

IV.

FINDINGS OF FACT AND DETERMINATIONS

A. The Hagen Farm site is a Facility within the meaning of Section 101(9) of CERCLA, 42 U.S.C. Section 9601(9). The Facility is located at 2318 County highway A, Dane County, Wisconsin.

B. The Facility consists of a total of approximately 10 acres in an area of rural surrounding that is dominated largely by sand and gravel mining and agriculture. Soil and gravel mining operations are located northwest, northeast and south of the Facility. The Stoughton Airfield is located adjacent to the northwest corner of the Facility. County Highway "A" passes just south of the Facility.

C. The Facility was operated as a sand and gravel pit prior to the late 1950s. The gravel pit then used for disposal of waste material from the late 1950s to the mid-1960s. The former disposal area encompasses approximately five acres of land located in the southwestern portion of the Facility which previously had been used as a gravel quarry. The quarry was believed to be approximately 14 to 18 feet deep at the time of waste disposal. The Facility operator accepted municipal wastes, waste solvents and other various organic materials including acetone, butyl acetate, 1-2-dichloroethylene, tetrahydrofuran, solid vinyl, sludge material containing methylethyl ketone and xylenes, and toluene. In a 103(c) notification submitted to the U.S. EPA by Uniroyal, Inc., in June 1981, Uniroyal indicated that F003 and F005 wastes,

which are hazardous wastes within the meaning of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. 6901, also were disposed of at the Facility.

D. During the period that the Facility was operated as a disposal facility, the property was owned by Nora Sundby, who is now deceased. The Facility was operated by City Disposal Corporation ("City Disposal"), an antecedent corporation of Waste Management of Wisconsin ("WMWI"). City Disposal was also the transporter of much of the waste that was deposited at the Facility. On November 30, 1977, the Facility was conveyed by the estate of Ms. Sundby to Orrin N. and Ida Mae Hagen. On February 24, 1987, Orrin Hagen conveyed ownership of the Facility to WMWI. The Facility property is currently owned by WMWI. The U.S. Rubber Company Plant at Stoughton, Wisconsin, generated industrial waste, some of which was disposed at the Facility from sometime in 1962 until August of 1966. The U.S. Rubber Company subsequently changed its name to Uniroyal, Incorporated. The Stoughton plant is now owned and operated by Uniroyal Plastics Company, Inc., which is the successor in interest to Uniroyal, Inc. in this matter. Waste materials generated at the Stoughton plant which were or may have been disposed at the Facility included solid chunks of vinyl and some organic solvents, such as toluene, acetone, xylene, tetrahydrofuran, and methyl ethyl ketone.

E. Beginning in November 1980, in response to complaints received from local residents, the WDNR began conducting groundwater sampling at nearby private water supply wells. Sampling of the on-Site monitoring wells during the period 1980-1986 indicated certain organic compounds were present in the groundwater, including benzene, ethylbenzene, tetrahydrofuran, xylenes, and toluene. In addition, nearby private water supplies on adjacent properties have also shown detectable levels of volatile organic compounds ("VOCs"). The

private wells located on the Facility had been impacted by acetone, tetrahydrofuran, vinyl chloride, xylene, trans 1,2-dichlorethene, and trichloroethylene.

F. In 1983, the State of Wisconsin brought an enforcement action for abatement of a public nuisance against WWI and Uniroyal. At the same time, nearby residents at the Facility brought a civil action against WWI and Uniroyal, seeking civil damages for reduced property values and potential health hazards resulting from groundwater and well contamination. The State of Wisconsin obtained a dismissal of its 1983 enforcement action against WWI and Uniroyal after the Facility was listed on the National Priorities List ("NPL"). In 1986, the parties to civil litigation brought by the nearby residents to the Facility against WWI and Uniroyal reached a settlement.

G. The Facility was proposed for inclusion on the NPL on September 18, 1985. The Facility was placed on the NPL in July of 1987. Subsequently, WWI and Uniroyal, the two Respondents named by U.S. EPA in connection with the Facility to date, entered into an Administrative Order by Consent (U.S. EPA Docket No. VW 87-C-016, dated September 14, 1987) (the "Consent Order") with the U.S. EPA and the WDNR. In the Consent Order, WWI and Uniroyal agreed to conduct a Remedial Investigation and Feasibility Study ("RI/FS") at the Facility. Accordingly, in July of 1988, upon U.S. EPA approval, in consultation with the WDNR, of the required Work Plans, fieldwork at the Facility commenced.

H. Two operable units, which are being conducted concurrently, have been defined for the Facility. Operable Unit ("OU") I, which is the Source Control Operable Unit ("SCOU"), is intended to address waste refuse and sub-

surface soils ("Waste/sub-Soils") at disposal area A and the two smaller disposal areas B and C. OU II, which is the Groundwater Control Operable Unit ("GOOU"), is intended to address the contaminated groundwater at the Facility. The OU approach was agreed upon after discussions among U.S. EPA, WNR, and Respondents during the early phase of the implementation of the Work Plan for the RI.

I. The RI for the SOOU was completed in early 1989, and the Technical Memorandum for the SOOU was submitted in March 1989. The RI for the GOOU was initiated in July 1989 and the Technical Memorandum for GOOU was submitted in February 1990. Currently, additional field activities to define the extent of plume migration are ongoing. The RI report for the GOOU, including the Endangerment Assessment, is scheduled for completion in July 1991. The ROD for the GOOU is scheduled for early 1992.

J. In June, 1990, U.S. EPA provided the FS and the Proposed Plan for the source control remedial action to the public. An opportunity for public comment was provided. Comments were to be submitted in writing to the U.S. EPA by August 10, 1990, or orally at the public meeting held in Stoughton, Wisconsin, on August 2, 1990. The Respondents were allowed to submit comments on the Proposed Plan for the final remedy during this public comment period.

K. Considering the Proposed Plan for remedial action and the public comments received, U.S. EPA, with concurrence by the State, selected a source control remedy for remediation of on-site waste and sub-surface soils at the Facility. U.S. EPA's decision is summarized in the Record of Decision ("ROD") signed by the U.S. EPA Administrator, Region V, on September 17, 1990. The ROD is attached as Appendix I. The selected remedy includes the following: consolidation of non-native materials from disposal areas B and C into

disposal area A with subsequent backfilling of disposal areas B and C with clean soil material; installation of a WDNR NR 504 solid waste cap over disposal area A after consolidation; In-situ vapor extraction of the waste refuse and sub-surface soils in disposal area A; off-gas treatment through carbon adsorption; installation and maintenance of a fence around disposal areas A, B, and C during remedial activities; and deed and access restrictions to prevent installation of drinking water wells within vicinity of the disposal areas and to protect the cap.

L. U.S. EPA's ROD includes a discussion of U.S. EPA's reasons for the selection of the source control remedy. The remedial action ("RA") has been determined to be a cost-effective remedial action which provides adequate protection of public health, welfare, and the environment, and meets all Federal and more stringent State ARARs.

M. Contaminants are being released to the environment through the following pathways: volatilization of contaminants through the soil to the air; direct contact; and release of contaminants from waste, and soils to the groundwater. These releases provide potential for exposure to humans as well as terrestrial and aquatic life.

N. Analyses of soils, waste, and fill materials performed during the RI revealed the presence of numerous hazardous substances as defined in Section 101(14) of CERCLA, including ethylbenzene, toluene, xylene, 2-butanone, tetrahydrofuran, vinyl chloride, arsenic, lead, and mercury. These contaminants are present in the subsurface soils at and above the water table and continue to be released into the groundwater. Some compounds detected in the soils and waste and their associated maximum concentrations are listed below.

WASTE AND SOIL ANALYTICAL DATA

(ug/kg)

<u>Chemical</u>	<u>Maximum</u>
<u>SEMI-VOLATILES</u>	
Naphthalene	46
1,4-Dichlorobenzene	280
Diethylphthalate	48
Di-n-Butylphthalate	690
Fluoranthene	67
Butylbenzylphthalate	18,000
bis(2-Ethylhexyl) Phthalate	120,000
Di-n-Octyl Phthalate	5,300
Phenanthrene	67
Unknown Semivolatiles	1,261,985
<u>PESTICIDES/PCBS</u>	
Dieldrin	11.6
4,4'-DDE	18.2
4,4'-DDD	128
4,4'-DDT	19.2
PCB-1248	338
PCB-1254	222
PCB-1242	284

0. Preliminary data developed during analyses of the groundwater performed during the RI for the SCOU revealed the presence of numerous hazardous substances as defined in Section 101(14) of CERCLA, including ethylbenzene, toluene, xylene, tetrahydrofuran, 2-Butanone, and metals. Some

compounds detected in groundwater and their associated maximum concentrations are listed below.

GROUNDWATER ANALYTICAL DATA
(ug/l)

<u>Chemical</u>	<u>Maximum</u>
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VOLATILES

2-Butanone	4,400,000
Ethylbenzene	4,400
Tetrahydrofuran	630,000
Toluene	550
Vinyl chloride	77
Total Xylenes	35,000

SEMI-VOLATILES

Naphthalene	8
1,4-Dichlorobenzene	10
Diethylphthalate	5
Phenol	5,600
Benzoic Acid	29,000
Benzyl Alcohol	26
bis(2-Ethylhexyl) Phthalate	34
Di-n-Octyl Phthalate	5
4-Chloro-3-Methylphenol	7
2,4-Dimethylphenol	330
4-Methylphenol	6,100
Bis(2-Chloroisopropyl) Ether	19

METALS

Arsenic	25.2
Barium	1,570

Lead

6

Mercury

6.5

This preliminary groundwater data indicates that the landfill that is part of this Facility is the source of the contamination found in the groundwater. U.S. EPA anticipates that data regarding contamination of the groundwater will be further developed during the RI for the GCOU.

P. From the late 1950s to the mid-1960s "hazardous substances" as defined in Section 101(14), of CERCLA, 42 U.S.C. Section 9601(14), were deposited, stored, disposed of, placed, or located at the Facility.

Q. The past, present, and/or future migration of hazardous substances from the Facility constitute an actual, and/or threatened "release" into the environment as defined in Section 101(22) of CERCLA, 42 U.S.C. Section 9601(22), and may present an imminent and substantial endangerment to the public health or welfare or the environment.

R. From the late 1950s to the mid-1960s, City Disposal Corporation was the "owner" and/or "operator" of the Facility as defined in Section 101(20) of CERCLA, 42 U.S.C. Section 9601(20), and "owned" and/or "operated" the Facility within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. Section 9607(a)(2). City Disposal Corporation was subsequently purchased by Waste Management of Wisconsin, Incorporated. The Facility property is currently owned by WWI.

S. The U.S. Rubber Company plant at Stoughton, Wisconsin, generated industrial waste, some of which was deposited at the Facility beginning sometime in 1962 and continuing through August of 1966. The U.S. Rubber company subsequently changed its name to Uniroyal, Incorporated. The

Stoughton plant is now owned and operated by Uniroyal Plastics Company, Incorporated, which is the successor in interest to Uniroyal, Incorporated.

T. Respondents are "persons" as defined in Section 101(21) of CERCLA, 42 U.S.C. Section 9601(21), and, based upon information available to U.S. EPA, each Respondent generated and/or transported hazardous substances which were disposed of at the Facility, making each Respondent a "liable person" with respect to the Facility within the meaning of Section 107 of CERCLA, 42 U.S.C. Section 9607. The responses to information requests and other documents supporting the Respondents' liability for performance of the actions required by this Administrative Order are contained in the Section 106 Administrative Record for the Administrative Order, which supports the issuance of the Administrative Order under Section 106 of CERCLA. The Index for the Section 106 Administrative Record is attached as Appendix II.

U. The actions required by this Administrative Order are necessary to protect the public health or welfare or the environment, and are consistent with the National Contingency Plan, 40 CFR Part 300 et seq., as amended.

V.

ORDER

Based upon the foregoing Findings of Fact and Determinations, and pursuant to Section 106(a) of CERCLA, 42 U.S.C. Section 9606(a), it is hereby ordered that Respondents perform the work as described below and in the Scope of Work ("SOW") attached hereto, and made an enforceable part hereof, as Appendix III.

A. Work to be Performed

1. The Respondents shall, within forty-five (45) days of the effective date of this Order, submit to U.S. EPA a Remedial Design and Remedial Action

("RD/RA") Work Plan to implement all portions of the recommended alternative outlined in the Record of Decision for the Facility and in the Scope of Work (Appendix III).

2. The RD/RA Work Plan shall be written in sufficient detail to fully address all necessary design parameters of the recommended alternative, shall be consistent with the SOW and shall be consistent with U.S. EPA's June 1986 Superfund Remedial Design and Remedial Action Guidance. In addition, the RD/RA Work Plan shall include, but not be limited to, the following elements:

- A Field Operating Plan for Waste Consolidation
- A Contingency Plan for Waste Consolidation
- A Sampling and Testing Plan for Clay

The RD/RA Work Plan and other documents submitted by the Respondents shall demonstrate that the Respondents can properly conduct the actions required by this Order.

3. U.S. EPA shall review and approve/disapprove the RD/RA Work Plan. If the RD/RA Work Plan is acceptable, approval shall be granted, in writing, and the RD/RA Work Plan shall become an integral and enforceable element of this Order. If the RD/RA Work Plan is disapproved, U.S. EPA shall state to the Respondents, in writing, the reasons for disapproval. Respondents shall, within thirty (30) calendar days of receipt of U.S. EPA's letter stating disapproval, incorporate all changes requested by U.S. EPA into the RD/RA Work Plan and submit the Amended RD/RA Work Plan to U.S. EPA. If approved, the Amended RD/RA Work Plan shall become an integral and enforceable element of this Order. Failure to incorporate all changes requested by U.S. EPA into the RD/RA Work Plan shall constitute a violation of the terms of this Order.

4. Respondents shall begin implementation of the RD/RA Work Plan immediately upon receipt of written approval by U.S. EPA. Unless otherwise directed by U.S. EPA and as mandated by Section 122(e)(6) of CERCLA, the Respondents shall not commence field activities until they receive written approval of the RD/RA Work Plan by U.S. EPA. Respondents shall complete the tasks outlined in the RD/RA Work Plan in accordance with the schedule outlined in the attached SOW. Failure of the Respondents to properly implement all aspects of the RD/RA Work Plan shall be deemed to be a violation of the terms of this Order.

5. The Site Health and Safety Plan developed pursuant to this Order shall be in accordance with U.S. EPA's guidance and protocol. After approval of the Site Health and Safety Plan by U.S. EPA Representatives, Respondents shall implement the Plan during all phases of activity at the Facility.

B. Respondents' Contractor and Remedial Design

All remedial work to be performed by the Respondents pursuant to this Administrative Order shall be under the direction and supervision of a qualified professional engineer. Prior to the initiation of remedial work at the Facility, the Respondents shall notify U.S. EPA and the WDNR, in writing, of the name, title, and qualifications of any proposed engineer to be used in carrying out the remedial work to be performed pursuant to this Administrative Order. Selection of any such engineer shall be subject to approval by U.S. EPA in consultation with WDNR.

VI.

QUALITY ASSURANCE

Respondents shall use quality assurance, quality control, and chain of custody procedures in accordance with U.S. EPA's "Interim Guidelines and

Specifications For Preparing Quality Assurance Project Plans" (QAM-005/80) and subsequent amendments. Prior to the commencement of any sampling and analysis under this Administrative Order, Respondents shall submit a Quality Assurance Project Plan ("QAPP") to U.S. EPA and WDNR that is consistent with the Scope of Work, Work Plans, and applicable guidelines. Prior to the development and submittal of a QAPP, Respondents shall attend a pre-QAPP meeting sponsored by U.S. EPA to identify all monitoring and data quality objectives. U.S. EPA, after review of Respondent's QAPP and WDNR's comments thereon, will notify the Respondents of any required modifications, conditional approval, disapproval, or approval of the QAPP. Upon notification of disapproval or any need for modifications, Respondents shall make all required modifications to the QAPP within thirty (30) calendar days of receipt of such notification.

Respondents shall ensure that U.S. EPA personnel or their authorized representatives are allowed access to any laboratory utilized by the Respondents in implementing the Order. Respondents shall ensure that any such laboratory will analyze samples submitted by U.S. EPA or WDNR for quality assurance monitoring.

VII.

FACILITY ACCESS, SAMPLING, DOCUMENT AVAILABILITY

A. To the extent that the Facility or other areas where work under this Order is to be performed is under ownership or possession by someone other than the Respondents, Respondents shall obtain all necessary access agreements. In the event that after using their best efforts Respondents are unable to obtain such agreements, Respondents shall immediately notify U.S. EPA and U.S. EPA may then, at its discretion, assist Respondents in gaining

access, to the extent of their authority and as provided by appropriate U.S. EPA guidance.

B. Respondents shall provide access to the Facility to U.S. EPA employees, contractors, agents, and consultants, as well as to representatives of the WDNR, at all reasonable times, and shall permit such persons to be present and move freely about the area in order to conduct inspections, take samples, and to conduct other activities which U.S. EPA or WDNR determine to be necessary. Respondents shall ensure that U.S. EPA and WDNR personnel and authorized representatives are allowed to oversee all remedial activities, and are granted access to the laboratory(ies) and to the records of the laboratory(ies) utilized by the Respondents for analyses required under the Work Plan.

C. The Respondents shall make available to U.S. EPA and the WDNR the results of all sampling and/or test or other data generated by the Respondents with respect to the implementation of this Administrative Order, and shall submit these results in monthly progress reports as described in Section IX of this Administrative Order.

D. At the request of U.S. EPA or the WDNR, the Respondents shall allow split or duplicate samples to be taken by U.S. EPA, the WDNR and/or their authorized representatives, of any samples collected by the Respondents pursuant to the implementation of this Administrative Order. The Respondents shall notify U.S. EPA and the WDNR not less than fourteen (14) calendar days in advance of any sample collection activity. In addition, U.S. EPA and the State shall have the right to take any additional samples that U.S. EPA or the WDNR deem necessary.

VIII.

PROGRESS REPORTS

A. The Respondents shall provide to U.S. EPA and WDNR written monthly progress reports which: (1) describe the actions which have been taken toward achieving compliance with this Administrative Order during the previous month as well as such actions, data, and plans which are scheduled for the next month; (2) include all results of sampling and tests and all other data received by the Respondents during the course of the Work; (3) include all plans and procedures completed under the RD/RA Work Plan during the previous month; and (4) include sections detailing anticipated problems/recommended solutions, problems encountered/ resolved, deliverables submitted, upcoming events/activities planned, key personnel changes, and scheduling. These progress reports are to be submitted to U.S. EPA and WDNR by the tenth day of every month following the effective date of this Administrative Order.

B. If the date for submission of any item or notification required by this Administrative Order falls upon a weekend or state or federal holiday, the time period for submission of that item or notification is extended to the next working day following the weekend or holiday.

C. Upon the occurrence of any event during the performance of the Work which, pursuant to Section 103 of CERCLA, requires reporting to the National Response Center, Respondents shall immediately orally notify the U.S. EPA Remedial Project Manager ("RPM") and WDNR, or, in the event of unavailability of the U.S. EPA RPM, the Emergency Response Branch, U.S. EPA Region V, in addition to the reporting required by Section 103. Within fourteen (14) calendar days after the onset of such an event, Respondents shall furnish to the U.S. EPA and WDNR a written report setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within thirty

(30) calendar days after the conclusion of such an event, Respondents shall submit a report to U.S. EPA and WDNR setting forth all actions taken to respond to the event.

IX.

REMEDIAL PROJECT MANAGER/PROJECT COORDINATORS

A. U.S. EPA will designate a Remedial Project Manager ("RPM") and WDNR will designate a Project Coordinator for the Facility, to observe and monitor the progress of any activity undertaken pursuant to this Administrative Order. The RPM shall have the authority lawfully vested in an RPM by the National Contingency Plan, 40 CFR Part 300, as amended. The Respondents shall also designate a Project Coordinator who shall have primary responsibility for implementation of the Work at the Facility.

B. To the maximum extent possible, except as specifically provided in this Administrative Order, communications between the Respondents and U.S. EPA concerning the terms and conditions of this Administrative Order shall be made between Respondents' Project Coordinator and the RPM.

C. Within seven (7) calendar days after the effective date of this Administrative Order, the Respondents shall provide written notice to the U.S. EPA RPM, the U.S. EPA's Office of Regional Counsel, and WDNR in writing, of the name, address and telephone number of the designated Project Coordinator and an alternate Project Coordinator.

X.

RETENTION AND AVAILABILITY OF INFORMATION

A. The Respondents shall make available to U.S. EPA and WDNR, and shall retain during the pendency of this Administrative Order, and for six years after termination of this Order, all records and documents in their

possession, custody, or control which relate to the performance of this Administrative Order, including, but not limited to, documents reflecting the results of any sampling, tests, or other data or information generated or acquired by the Respondents or on behalf of the Respondents with respect to the Facility. At the conclusion of the six year period following termination of this Order, the Respondents shall provide written notice to the U.S. EPA RPM, the U.S. EPA's Office of Regional Counsel, and WDNR, ninety (90) calendar days prior to the destruction of such documents, and upon request by U.S. EPA or WDNR, the Respondents shall relinquish custody of the documents to U.S. EPA or the WDNR.

B. The Respondents may assert business confidentiality claims covering part or all of the information provided in connection with this Administrative Order in accordance with Section 104(e)(7)(F) of CERCLA, 42 U.S.C. Section 9604(e)(7), and pursuant to 40 CFR Section 2.203(b) and applicable State law.

C. Information determined to be confidential by U.S. EPA will be afforded the protection specified in 40 CFR Part 2, Subpart B and, if determined to be entitled to confidential treatment under State law by WDNR, afforded protection under State law by WDNR. If no such claim accompanies the information when it is submitted to the U.S. EPA and WDNR, the public may be given access to such information without further notice to the Respondents.

D. Information acquired or generated by the Respondents in performance of the Work that is subject to the provisions of Section 104(e)(7)(F) of CERCLA, 42 U.S.C. Section 9604(e)(7)(F), shall not be claimed as confidential by the Respondents.

XI.

PENALTIES FOR NONCOMPLIANCE

The Respondents are advised, pursuant to Section 106(b) of CERCLA, 42 U.S.C. Section 9606(b), that willful violation or subsequent failure or refusal to comply with this Order, or any portion thereof, may subject the Respondents to a civil penalty of no more than \$25,000 per day for each day in which such violation occurs, or such failure to comply continues. Failure to comply with this Administrative Order, or any portion thereof, without sufficient cause may also subject the Respondents to liability for punitive damages in an amount equal to three times the amount of any costs incurred by the U.S. EPA as a result of the Respondents' failure to take proper action, pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. Section 9607(c)(3).

XII.

OTHER CLAIMS

U.S. EPA and WDNR are not to be construed as parties to, and do not assume any liability for, any contract entered into by the Respondents in carrying out the activities pursuant to this Administrative Order. The proper completion of the Work under this Administrative Order is solely the responsibility of the Respondents.

XIII.

NOTICES

Whenever, under the terms of this Administrative Order, notice is required to be given, or a report or other document is required to be forwarded by one party to another, such correspondence shall be directed to the following individuals at the addresses specified below:

As to the United States or U.S. EPA:

a. Jeffrey A. Cahn
Assistant Regional Counsel
Attn: Hagen Farm Site

As to WDNR

Theresa Evanson
State Project Coordinator
Hagen Farm Site

(5CS-TUB-3)
Office Regional Counsel
U.S. Environmental Protection
Agency
230 South Dearborn Street
Chicago, Illinois 60604

Department of Natural
Resources
Box 7921
Madison, Wisconsin 53707

and;

b. Jae B. Lee
Remedial Project Manager
Hagen Farm Site
Remedial and Enforcement Response Branch (5HS-11)
U.S. Environmental Protection
Agency
230 South Dearborn Street
Chicago, Illinois 60604

XIV.

CONSISTENCY WITH NATIONAL CONTINGENCY PLAN

The U.S. EPA has determined that the Work, if properly performed as set forth in Section V hereof, is consistent with the provisions of the National Contingency Plan pursuant to 42 U.S.C. Section 9605.

XV.

RESERVATION OF RIGHTS

A. Nothing contained herein shall be construed to prevent U.S. EPA from seeking legal or equitable relief to enforce the terms of this Administrative Order, or from taking the legal or equitable action it deems appropriate and necessary, or from requiring the Respondents in the future to perform additional activities pursuant to CERCLA, 42 U.S.C. Section 9601 et seq., or any other applicable law.

B. U.S. EPA reserves its right to bring an action against Respondents pursuant to Section 107 of CERCLA, 42 U.S.C. Section 9607, for recovery of any costs incurred by U.S. EPA in connection with the Hagen Farm Facility.

XVI.

MODIFICATION

Except as provided for herein, there shall be no modification of this Administrative Order without written approval of U.S. EPA.

XVII.

EFFECTIVE AND TERMINATION DATES

A. This Administrative Order shall be effective March 15, 1991.

B. When the Respondents determine that they have completed the Work, they shall submit to U.S. EPA and WDNR a Notification of Completion. Upon receipt of such Notification, U.S. EPA and WDNR shall schedule final inspections and close out activities as described in the June 1986 U.S. EPA Superfund Remedial Design and Remedial Action Guidance. Such activities shall include, at a minimum, the following:

- 1) "Prefinal Construction Conference" by U.S. EPA, WDNR and the Respondents;
- 2) "Prefinal Inspection" by U.S. EPA and WDNR;
- 3) Preparation of a "Prefinal Inspection Report" by the Respondents.
- 4) "Final Inspection" by U.S. EPA, WDNR, and the Respondents.

The final remedial action report shall summarize the work performed, any modification to the RD/RA Work Plan, and the performance levels achieved. The summary shall include or reference any supporting documentation.

Upon receipt of the final remedial action report, U.S. EPA and WDNR shall review the accompanying report and any other supporting documentation and conduct any appropriate site inspection. U.S. EPA shall issue a Certification of Completion upon its determination that the Respondents have

satisfactorily completed the Work and have achieved standards of performance required under this Administrative Order for this Operable Unit.

XVIII.

ACCESS TO ADMINISTRATIVE RECORD

The Section 106 Administrative Record supporting the above Findings of Fact and Determinations is available for review on weekdays between the hours 8:00 a.m. and 5:00 p.m., at the U.S. EPA, Region V, 230 South Dearborn Street, Chicago, Illinois 60604. Please contact Jeffrey A. Cahn, Assistant Regional Counsel at 312-886-6670, for review of the Section 106 Administrative Record at this location. The 106 Administrative Record is also available for review at the Stoughton Public Library, 304 S. 4th St., Stoughton, Wisconsin 53589.

XIX.

OPPORTUNITY TO CONFER

A conference has been scheduled for March 13, 1991, 10:00 am in the northwest corner conference room on the 11th floor, U.S. EPA Region V, 230 South Dearborn Street, Chicago, Illinois. You may attend this conference to discuss with U.S. EPA this Administrative Order and its applicability to you. You may appear in person and/or by an attorney or other representative.

Any comments which you have regarding this Administrative Order, its applicability to you, the correctness of any factual determinations upon which the Order is based, the appropriateness of any action which you are ordered to undertake, or any other relevant and material issue must be reduced to writing and submitted to U.S. EPA on or before March 13, 1991. Any such writing should be directed to Jeffrey A. Cahn, at the address cited above.

Respondent shall provide notice in writing to Jeffrey A. Cahn, at the address cited above, stating its intentions to comply with the terms hereof.

Such notice shall be received by U.S. EPA on or before the effective date of this Administrative Order. In the event any Respondent fails to provide such notice, said Respondent shall be deemed not to have complied with the terms of this Administrative Order.

Respondents are hereby notified that U.S. EPA will take any action pursuant to Section 106 (a) of CERCLA, which may be necessary in the opinion of U.S. EPA for the protection of public health or welfare or the environment, and Respondents may be liable under Section 107 (a) of CERCLA, for the costs of these government actions.

IT IS SO ORDERED:

BY:


David A. Ullrich

DATE:

3/7/91

Director, Waste Management Division
U.S. EPA, Region V

EFFECTIVE DATE: March 15, 1991

Appendix I
Record of Decision (ROD)

**HAGEN FARM SITE, WI
SOURCE CONTROL OPERABLE UNIT**

DECLARATION FOR THE RECORD OF DECISION

Site Name and Location

**Hagen Farm Site, Source Control Operable Unit
Dane County, Wisconsin**

Statement of Basis and Purpose

This decision document represents the selected remedial action for the Hagen Farm site, in Dane County, Wisconsin, Source Control Operable Unit, which was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) and, to the extent practicable, the National Oil and Hazardous Substance Pollution Contingency Plan (NCP).

This decision is based on the Administrative Record file for the Hagen Farm site.

The State of Wisconsin concurs with the selected remedy.

Assessment of the Site

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

Description of Remedy

This source control operable unit is the first of two operable units for the site. The selected remedial action for this operable unit addresses the source of contamination by remediation of on-site wastes and contaminated sub-surface soils.

The major components of the selected remedy include:

- * Within the larger area of contamination (AOC), consolidation of non-native materials from disposal areas B and C into disposal area A with subsequent backfilling of disposal areas B and C with clean soil material;**
- * Installation of a WDNR NR 504 solid waste cap over disposal area A after consolidation;**

RECORD OF DECISION
DECISION SUMMARY
HAGEN FARM SITE
SOURCE CONTROL OPERABLE UNIT
DANE COUNTY, WISCONSIN

Prepared By:
U.S. Environmental Protection Agency
Region V
Chicago, Illinois
September, 1990

**NOI SUMMARY
HAGEN FARM SUPERFUND SITE, SOURCE CONTROL OPERABLE UNIT
DANE COUNTY, WISCONSIN**

SITE LOCATION AND DESCRIPTION

The Hagen Farm Site (the "Site") is located at 2318 County Highway A, approximately one mile east of the City of Stoughton, Dane County, Wisconsin. The 10-acre Site is situated in a rural surrounding that is dominated largely by sand and gravel mining and agriculture. Soil and gravel mining operations are located northwest, northeast and south of the Site. The Stoughton Airfield is located adjacent to the northwest corner of the Site. County Highway "A" passes just south of the Site (See Figure 1).

The City of Stoughton's municipal walls are located approximately two miles to the west, and eight private wells are located within 1,200 feet of the Site. The private wells located at the Site are no longer in use. Approximately 350 people reside within one mile of the Site.

The Site is located in the Yahara River watershed, in an area of flat to gently rolling topography. The Yahara River is located approximately 1.5 miles to the west and flows in a southerly direction. The land surface generally slopes toward the Yahara River from topographically high areas located to the northeast and east. Surface water drainage in the area is generally poorly developed, apparently due to permeable surface soils. The only substantial surface water bodies in the area are a pond located approximately 1/2 mile south of the Site and the Yahara River. There is no designated Wisconsin State significant habitat, or historic landmark site directly or potentially affected. There are no endangered species within close proximity of the Site.

The Site is located in an area dominated by glacial outwash deposits, which extend approximately one-half mile to the northeast. These deposits are dominated by sand and gravel. Beyond this, ground moraine and occasional drumlins are encountered. Lacustrine deposits associated with Glacial Lake Yahara are located approximately one-eighth mile south. Bedrock, primarily sandstones and dolomites, underlie the glacial deposits in this area. Bedrock generally slopes from the west to southwest, toward a preglacial valley associated with the Yahara River. The depth to bedrock ranges from 50 to 80 feet near the Site.

The current Site topography is the result of sand and gravel mining and waste disposal activities. Prior to these activities, the ground surface probably sloped from the existing topographically high area located west and northwest toward the southeast and east. The excavated area in the northwest corner of the property is flat. This flat area is separated by a ridge from the water-filled depression located to the northeast.

Within the Site's larger "Area of Contamination (AOC)", waste disposal took place within three subareas. These subareas are A (6 acres, located in the

residents at the site brought a civil action against WRI and Underpal, seeking civil damages for reduced property values and potential health hazards resulting from groundwater and well contamination. The state of Wisconsin obtained a dismissal of its 1993 enforcement action against WRI and Underpal after the site was listed on the National Priorities List ("NPL"). In 1996, the parties to civil litigation brought by the nearby residents to the site against WRI and Underpal reached a settlement. The exact terms of the settlement were confidential. It is known, however, that one of the terms of the settlement required WRI to purchase the site property from Oscarin Pagan, as well as other property located adjacent to the site. Upon acquiring these properties, WRI razed the structures constructed thereon.

The site was proposed for inclusion on the NPL on September 18, 1995. The site was placed on the NPL in July of 1997. Subsequently, WRI and Underpal, the two potentially responsible parties ("PRPs") named by U.S. EPA in connection with the site to date, entered into an Administrative Order by Consent (U.S. EPA Document No. WI 87-C-016, dated September 14, 1997) (the "Consent Order") with the U.S. EPA and the WRIER. In the Consent Order, WRI and Underpal agreed to conduct a Remedial Investigation and Feasibility Study ("RI/FS") at the site. Accordingly, in July of 1998, upon U.S. EPA approval, in consultation with the WRIER, of the required Work Plans, fieldwork at the site commenced.

Two operable units, which are being conducted concurrently, have been defined for the site. Operable Unit ("OU") I, which is the Source Control Operable Unit ("SCOU"), is intended to address waste refuse and sub-surface soils ("waste/sub-soils") at disposal area A and the two smaller disposal areas B and C. OU II, which is the Groundwater Control Operable Unit ("GCOU"), is intended to address the contaminated groundwater at the site. The OU approach was agreed upon after discussions among U.S. EPA, WRIER, and PRPs during the early phase of the implementation of the Work Plan for the RI.

The RI for the SCOU was completed in early 1999, and the Technical Memorandum for the SCOU was submitted in March 1999. The RI for the GCOU was initiated in July 1999 and the Technical Memorandum for GCOU was submitted in February 1999. Currently, additional field activities to define the extent of plume migration are ongoing. The RI report for the GCOU, including the Discharge Assessment, is scheduled for completion in July 1999. The ROD for the GCOU is scheduled for early 1999.

COMMUNITY RELATIONS ACTIVITIES

A Community Relations Plan for the site was finalized in July 1998. This document lists contacts and interested parties throughout the local and government community. It also establishes communication pathways to ensure timely dissemination of pertinent information. The RI/FS and the Proposed Plan for the SCOU were released to the public in July 1999. All of these documents were made available in the information repositories maintained at the Stoughton Public Library and Highland Realty. An administrative record file containing these documents and other site-related documents was

source of groundwater contamination. The VOCs in the Waste/sub-Soils are considered to be the principal threat for this SCOU.

The groundwater contamination problem will be addressed in a future GOU, Record of Decision which is expected to be the final action for the Site.

The FS identified two remedial objectives for the SCOU based on the data obtained during the RI and the possible exposure routes identified. The objectives identified in the FS are:

- 1) To reduce or minimize direct contact with contaminated waste and soils; and,
- 2) To reduce or minimize release of contaminants to the groundwater.

V. SUMMARY OF SITE CHARACTERISTICS

In March, 1989, a Technical Memorandum for the SCOU was completed under the guidance and oversight of U.S. EPA and WNR. The Remedial Investigation (i.e., Technical Memorandum #1) for the SCOU was to determine the nature and extent of contamination at the source, and evaluate possible exposure pathways. The report summarized all soil-gas, test-pit, soil, air, and on-site groundwater analytical data that had been collected. This report should be consulted for a more thorough description of the site characteristics.

The following are the results of RI at the Site:

- Based on the geophysical survey, soil-gas, and test-pit survey, it appears that most of the waste disposal activity occurred in disposal area A. Disposal area A encompasses approximately six acres (100 feet long and 400 feet wide). The wastes within disposal area A are buried to a depth of two to three feet near the eastern edge, to a depth of 16 feet near the center. Eight feet is the average overall thickness of buried wastes. The volume of waste for disposal area A is estimated at 67,650 cubic yards. The test-pit survey and refuse borings indicate that the type of waste present in disposal area A includes plastic sheeting, paper-coated plastic, paint sludge, grease, rubber, and municipal waste, such as wood, glass, paper, and scrap metal. No drums were discovered during the test-pit excavation activity.

Based upon refuse borings, test-pits, and groundwater table measurements, the bottom of the waste refuse material is estimated to be 10 to 15 feet above the seasonal high water table in disposal area A. The volume of unsaturated sub-waste soils for disposal area A is approximately 112,000 cubic yards.

Disposal areas B and C seem to contain only scattered domestic wastes. A geophysical survey, test-pits and soil gas tests revealed a small quantity of municipal waste in disposal areas B and C. It appears that disposal areas B and C were not used for the disposal of industrial

system. Furthermore, based on surface water quality results and inferred groundwater flow paths, it appears the drainage ditch east of the Site and Surby's pond to the south are not groundwater discharge points.

The results of the RI at the Site indicate that the waste refuse materials in disposal area A have been and continue to be a source for sub-surface soil and groundwater contamination.

The investigation for the groundwater contamination at the Site is expected to be completed by the end of 1990. Initial results of the investigation indicate that the groundwater flows to the south and that the contaminant plume extends south of the pond located one-half mile from the Site. The exact boundary of the southern edge of the plume has not yet been determined. Seven residential wells located downgradient of the Site were sampled on August 1990 for any potential impact from the contaminant plume. More details of the nature and extent of the groundwater contaminant plume will be addressed in the subsequent GOU.

VI. SUMMARY OF SITE RISKS

This section qualitatively describes the risks posed by contaminants in Waste/sub-Soils to human health and the environment. Based on the historical findings and on-site groundwater data, which exceeded the drinking water and groundwater quality standards of the U.S. EPA and the WDR, respectively, it is determined that remedial action is needed to address the source of the groundwater contamination. Because this remedy is a source control operable unit, a final baseline risk assessment for the Site is not available. No quantitative risk numbers have been calculated for exposure to site contaminants. However, qualitative risk information is organized and outlined below to demonstrate that action is necessary to stabilize the site and prevent the degradation of the groundwater. The baseline risk assessment for the Site will be conducted later during the GOU phase.

The greatest risk present at the Site is from the groundwater contamination. However, the source of the groundwater contamination is the contamination found in the Waste/sub-Soils at the Site.

The following is a qualitative discussion of the site risks.

(A) Contaminants of Concern

The following chemicals have been detected in soil gas, leachate and on-site groundwater wells at concentrations above background, and screened waste refuse analyses and can be inferred to be present in source wastes.

VOCs

- . Ethylbenzene
- . Toluene

Semi-VOCs

- . Benzyl alcohol
- . Phenol
- . bis (2-chloroisopropyl) ether
- . bis (2-ethylhexyl) phthalate

Waste/sub-Soils to the groundwater. Present risks from the groundwater are unacceptable. As shown in Table 3, the contaminants in the on-site groundwater exceed Federal and State Standards. Continued leaching of contaminants from the Waste/sub-Soils to the groundwater will result in continued unacceptable risks. Should the contaminants migrate to existing private wells, or in the unlikely event of future site development involving the installation of a water supply well, contaminant exposure via groundwater use and consumption may occur. More detailed evaluation of both current and future potential human health and environment risks associated with contaminated groundwater exposure will be addressed in subsequent steps of GOU.

Implementation of the selected remedy as presented by this SOU will reduce exposure to contaminated soils, control air emissions, and minimize or reduce contaminant migration to the groundwater.

(C) Environmental Assessment

The natural habitat existing prior to sand and gravel mining operations at the Site was destroyed. At present, the waste disposal area is covered with a layer of soil material which supports vegetation primarily consisting of grasses and other herbaceous plants, with some tall trees. This area is likely frequented by wildlife including birds, small mammals and deer. Although an inventory of plant and animal species has not been performed, the Site is not known to be inhabited by rare or endangered species. Land in the vicinity has been developed for agricultural, mining and commercial purposes. Sensitive ecological habitats (e.g., wetlands) are not in close proximity to the Site. The Site is not in a floodplain. The potential adverse impacts of Site wastes on the surrounding ecology are not considered appreciable in comparison to the loss of habitat which historically occurred during the active sand and gravel mining phase of the Site.

VII. DOCUMENTATION OF SIGNIFICANT CHANGES

No significant changes have been made since the publication of the FS and Proposed Plan in July 1990.

VIII. DESCRIPTION OF ALTERNATIVES

Alternatives for the remediation of contaminated Waste/sub-Soils, were developed to achieve the following goals:

- minimize the potential for direct contact with the contamination;
- minimize the potential for migration of waste/sub-Soils contaminants into the groundwater.

A comprehensive list of appropriate remedial technologies was identified for Source Control. These technologies were screened based on their cost,

not involve any treatment to reduce the mobility, toxicity, or volume of waste, it was determined that the more impermeable capping option afforded by Subtitle C and NR 181 was both relevant and appropriate under this alternative. Therefore, only the Subtitle C cap will be evaluated for this alternative during the comparative analyses. No treatment of contaminants is involved in this alternative.

The cap would be designed to cover disposal area A. The area to be capped is approximately 240,000 sq ft (5.5 acres). The capital costs of this alternative is approximately \$2,751,000, and annual Operation and Maintenance (O&M) cost is \$8,899. The 30-year Present Worth (PW) cost is \$2,888,000. The amount of time necessary to implement this alternative would be 7 months.

ALTERNATIVE 3: IN-SITU VAPOR EXTRACTION AND CAPPING

In this alternative, the Waste/sub-Soils in disposal area A would be treated using In-Situ Vapor Extraction (ISVE). Gas is extracted from the Waste/sub-Soils through extraction wells placed strategically at the Site. The gas travels from the wells through header pipes using a blower. The off-gases would be treated and discharged to the atmosphere.

Vapor extraction is used primarily for treating VOC contamination. A vapor extraction system is relatively inexpensive and allows for process flexibility during remediation activities. The major costs for this technology are the installation of extraction and injection wells. The number of wells used may vary during operation to improve system efficiency. By treating the Waste/sub-Soils in place without excavation, release of untreated contaminants to the atmosphere is avoided.

Prior to the implementation of in-Situ Vapor Extraction, non-native materials from disposal areas B and C will be consolidated to disposal area A. Approximately 37,000 cubic yards of fill is needed to bring area A up to required slopes before cap placement. Consolidation of solid waste materials from areas B and C will provide some of the required fill material and will ensure that all site waste materials are properly confined. Then a low permeability cap, which meets the requirements of NR 504.07, WAC, will be installed over disposal area A (see Figure 5). The NR 504.07 cap would reduce leachate production by reducing infiltration and would control moisture content in the Waste/sub-Soils to improve the Vapor Extraction system performance.

As stated for Alternative 2, a RCRA Subtitle C cap would be potentially relevant and appropriate. The U.S. EPA and WNR have determined that for this particular Alternative, the Subtitle C cap, while relevant, is not appropriate because construction of the ISVE system would impair the integrity of a Subtitle C cap. An NR 504.07 cap will provide an adequate level of protection when combined with treatment and can easily be repaired after installation of the ISVE system.

For the discharge of off-gas emitted from the Vapor Extraction procedure,

would be constructed within a minimally contaminated area of the AOC. The double lined treatment/disposal cell would provide medium protection for treatment of the contaminants. After completion of treatment, a RCRA Subtitle C (NR 181, WAC) cap would be placed over the treatment/disposal unit. The Subtitle C cap would be relevant and appropriate because the integrity of the cap could be maintained and it would provide medium protection to the treatment/disposal unit. The IDR requirements are not AARs for this alternative, because no "placement" of waste occurs. Upgrading an existing landfill facility to consolidate wastes within the AOC does not constitute placement, according to the MCP.

For the discharge of excess leachate produced from this alternative, the NR 105, WAC, Surface Water Quality for Toxic Substances, is an AAR. The excess leachate would be treated in order to meet NR 105 standards. A toxicity characteristics leaching procedure ("TCLP") test will be conducted for the treatment sludge to determine whether further treatment is necessary for disposal in a RCRA compliant landfill in order to comply with Land Disposal Restrictions ("LDRs").

The volume of waste to be consolidated and treated is approximately 67,650 cubic yards from disposal area A and non-native materials from disposal areas B and C. The capital costs of this alternative is approximately \$12,894,000. The average annual O&M cost is \$82,300, and the 30-year PW cost is approximately \$14,129,000. The amount of time necessary to implement this alternative would be 10 years.

ALTERNATIVE 5: WASTE EXCAVATION WITH ON-SITE INCINERATION, VAPOR EXTRACTION AND CAPPING

This alternative incorporates waste excavation with on-site incineration and disposal. The excavation activities are the same as described in Alternative 4. On-Site materials handling, staging, and storage may also be required. Waste would be characterized prior to incineration. Treatment residuals, such as ash and scrubber water, would be further treated, if necessary, and disposed of off-site in accordance with the IDRs.

Under this alternative, a large depression would be created by waste excavation exposing contaminated sub-surface soils in disposal area A. This depression would be filled with imported clean fill materials and the non-native materials from disposal areas B and C, followed by a Solid Waste cap. The contaminated sub-surface soils would be treated with ISVE.

For this alternative, incineration would be done in an incinerator which meets the design requirements of 40 CFR Part 264 Subpart O. A TCLP test will be conducted for the treatment residuals, such as ash and scrubber water, to determine whether further treatment is necessary for disposal in a RCRA compliant landfill in order to comply with IDRs requirement.

The volume of waste to be incinerated is approximately 67,650 cubic yards from disposal area A. The capital costs of this alternative is

necessary to implement these alternatives.

For Alternative 2, a RCRA Subtitle C multi-layer cap would be installed in order to comply with RCRA cap design standards.

Alternatives 3 and 5 would meet the State Landfill closure requirements (i.e., NR 504.07, WAC). Alternative 4 would meet state (NR 351, WAC) and Federal (40 CFR 264.301) hazardous waste landfill requirements.

Alternative 4 also would meet the Federal RCRA Subtitle C cap requirement.

NR 445, Control of Hazardous Pollutants, is an ASER for Alternatives 3, 4 and 5. The extracted off-gases should be treated in order to meet NR 445 emission limit requirements.

Toxic Substances Control Act ("TSCA") is not an ASER for this site because PCBs detected at the site, at a median level of 300 ppb, is less than 5 ppm.

The full listing of ASERs for the site is contained in the FS.

3. Long-Term Effectiveness and Permanence

Residual risks associated with direct contact with wastes will be reduced by each alternative through capping, which will minimize direct exposure to wastes. Alternatives 3, 4 and 5 will reduce these risks further by removing and treating, biodegrading or incinerating contaminants. Risks associated with direct contact with waste materials in the future will be minimized through implementation of institutional controls.

Residual risks associated with migration of contaminants from the source to groundwater were considered greatest for Alternative 2, because the wastes are only contained and not treated or destroyed. Alternatives 3 through 5 provide the lowest residual risks to groundwater since the source of groundwater contamination is being treated.

Effectiveness is exclusively dependent on maintaining the integrity of the cap over the long term for Alternative 2. Alternative 2 will not remove contaminants within the waste which could ultimately migrate to the groundwater. Therefore, maintenance of the cap is key to the long-term effectiveness and permanence of this alternative.

Alternative 2 through 4 will be effective in achieving remedial objectives through installation of multi-layer cap, which will limit the infiltration of precipitation through the landfill and preclude the leaching of contaminants into the groundwater.

Alternative 3 will be effective in removing VOCs in the waste/sub-soils through vapor extraction. In addition, the installation of the solid waste cap will minimize the leaching of contaminants into the groundwater.

Alternative 4 is anticipated to be effective in achieving remedial objectives through biological degradation. Tests at other sites have

Alternative 5, Waste Excavation with on-site Incineration, may pose added risks to the community and workers due to increased air emissions. However, the levels of potential containment exposure to remediation workers could be minimized by the use of personal protective equipment and standard dust control measures in each alternative. Alternatives 2 and 3 are anticipated to pose minimal risks to remediation workers and the community because they do not involve excavating the waste. Additional risks to the surrounding ecology were not considered appreciable for any of the alternatives.

6. Implementability

Alternatives 2 is the easiest to technically implement compared to the other three alternatives. Alternative 3 is somewhat easier to implement than Alternative 4 and 5 because it involves less construction at the site. The most difficult alternative to implement would be Alternative 5. Difficulties associated with this alternative include acquiring a supplementary fuel source on-site, disposing of the ash, supplying sufficient water needed for the scrubbers, and treating and disposing the contaminated scrubber water. Alternatives 3 and 4 would both be relatively straightforward to implement technically. Administratively, alternatives 2 and 3 are easier than alternatives 4 and 5 because they involve less coordination with relevant agencies.

Alternatives 2 through 4 require services and materials that should be available. It is assumed that appropriate material to perform cap construction could be obtained from a borrow source located within four miles of the site. For Alternative 5, materials and services are available, but their availability is more restricted than the other alternatives.

7. Cost

Alternative 2 involves a capital costs of \$2,751,000, annual Operation and Maintenance (O&M) costs of \$8,899 and a 30-year Present Worth (PW) cost of \$2,888,000.

Alternative 3 involves a capital costs of \$2,679,400, average annual O&M cost of \$29,530, and a 30-year PW cost of \$3,299,000.

Alternative 4 involves a capital costs of \$12,894,000, average annual O&M cost of \$82,300, and a 30-year PW cost of \$14,129,000.

Alternative 5 involves a capital costs of \$59,410,000, average annual O&M cost of \$22,800, and a 30-year PW cost of \$59,858,000.

8. State Acceptance

The State of Wisconsin is in agreement with the U.S. EPA's analyses and recommendations presented in the RI/FS and the proposed plan. The State concurs with the selected alternative (presented in Section X, below).

regenerated, thus they are not subject to LDRs.

- * Institutional controls would be relied upon to provide additional effectiveness to the remedy. These include zoning restriction, deed notice, and construction of a fence.

XI. STATUTORY DETERMINATIONS

The selected remedy must satisfy the requirements of Section 121 of CERCLA to:

- a. protect human health and environment;
- b. comply with ARARs;
- c. Be cost-effective;
- d. Utilize permanent solutions and alternate treatment technologies to the maximum extent practicable; and,
- e. Satisfy the preference for treatment as a principle element of the remedy or document in the ROD why the preference for treatment was not satisfied.

The implementation of Alternative 3 at the Site satisfies the requirements of CERCLA as detailed below:

a. Protection of Human Health and the Environment

Implementation of the selected alternative will reduce and control potential risks to human health posed by exposure to contaminated waste and air emission by treating contaminated Waste/sub-Soils.

Capping the landfill, in addition to reducing any potential risks posed by direct exposure to contaminated waste, will reduce the infiltration of precipitation through the landfill. Groundwater contaminant loading will thus be reduced. In-Situ Vapor Extraction of the contaminated Waste/sub-Soils will also reduce the groundwater contaminant loading.

No unacceptable short-term risks will be caused by implementation of the remedy. The site workers may be exposed to noise and dust nuisances during construction of the cap. ISVE should not present short-term risks due to VOC emission if properly designed and monitored. A Standard Safety program will manage any short-term risks. Dust control measures and off-gas treatment would reduce those risks as well.

b. Compliance with ARARs

An NR 504.07 Solid Waste cap is an ARAR for Alternative 3. A RCRA Subtitle C cap, while relevant, is not appropriate, as described in Section VIII of this ROD. NR 445, WAC, Control of Hazardous Pollutants, is an ARAR for the discharge of off-gas from the vapor extraction procedure.

Compliance with Wisconsin Statute, Chapter 160 and NR 140, WAC, will be achieved through the selection of the final remedy for the GOU for this

is therefore determined to be the most appropriate solution for the contaminated Waste/Sub-Soils at the Hagen Farm site.

The State of Wisconsin is in concurrence with the selected remedy. A public comment was received concerning the cost of the remedy, and this comment is fully addressed in the Responsiveness Summary.

e. Preference for treatment as a principal element

The groundwater contaminant plume will be addressed in a second operable unit. Because the selected alternative treats the VOCs, which are the continuing source of groundwater contamination, it will address the principal threat for the SCOU at the Site through treatment and satisfies the preference for treatment as a principal element. In addition, during full-scale implementation of ISVE, enhanced biological treatment of semi-VOCs will be investigated and if feasible, implemented as part of this remedy.

Figure 2
Site Diagram
Hagen Farm Site
Dunkirk Township, Wisconsin
 (Not To Scale)

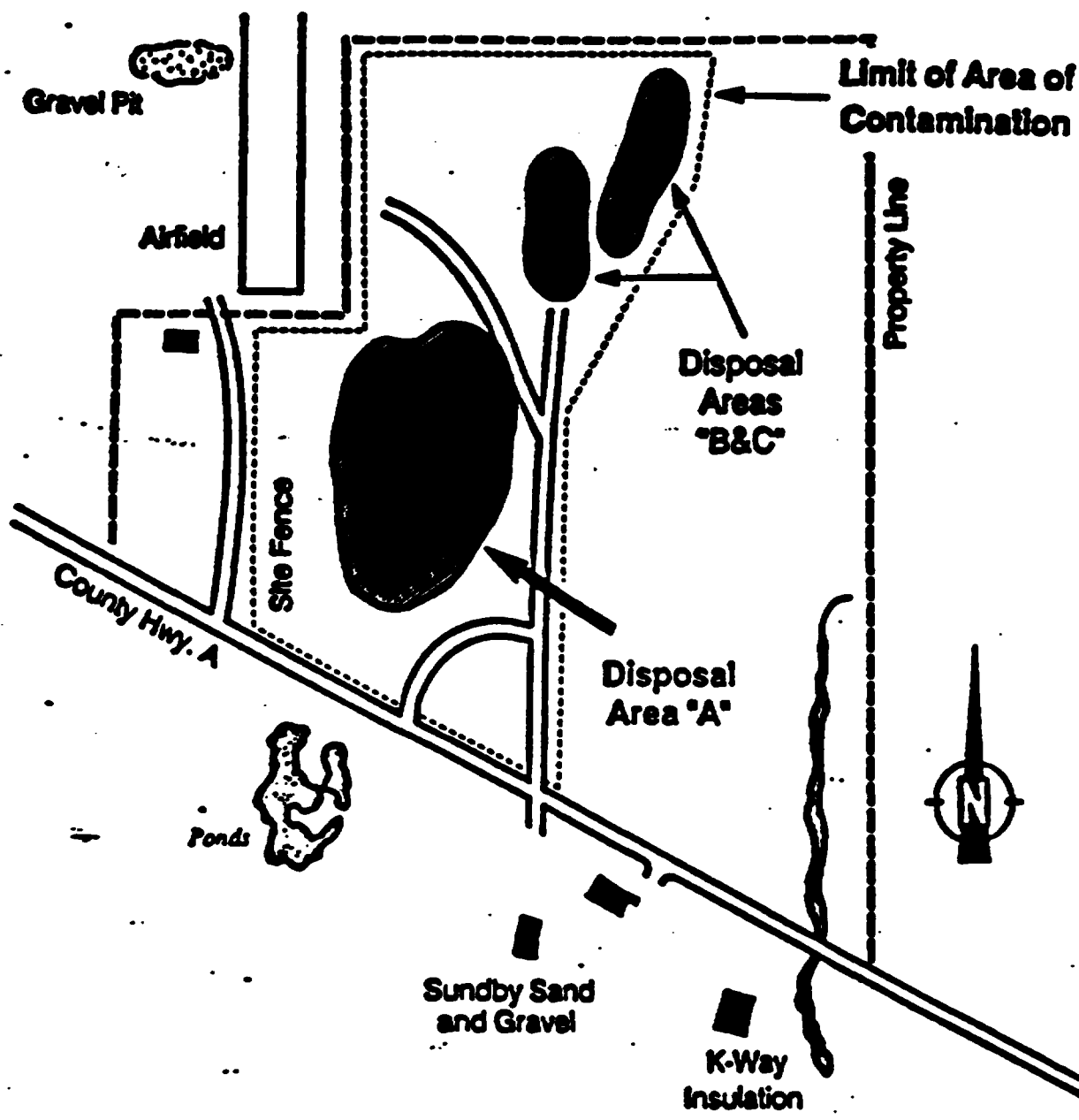
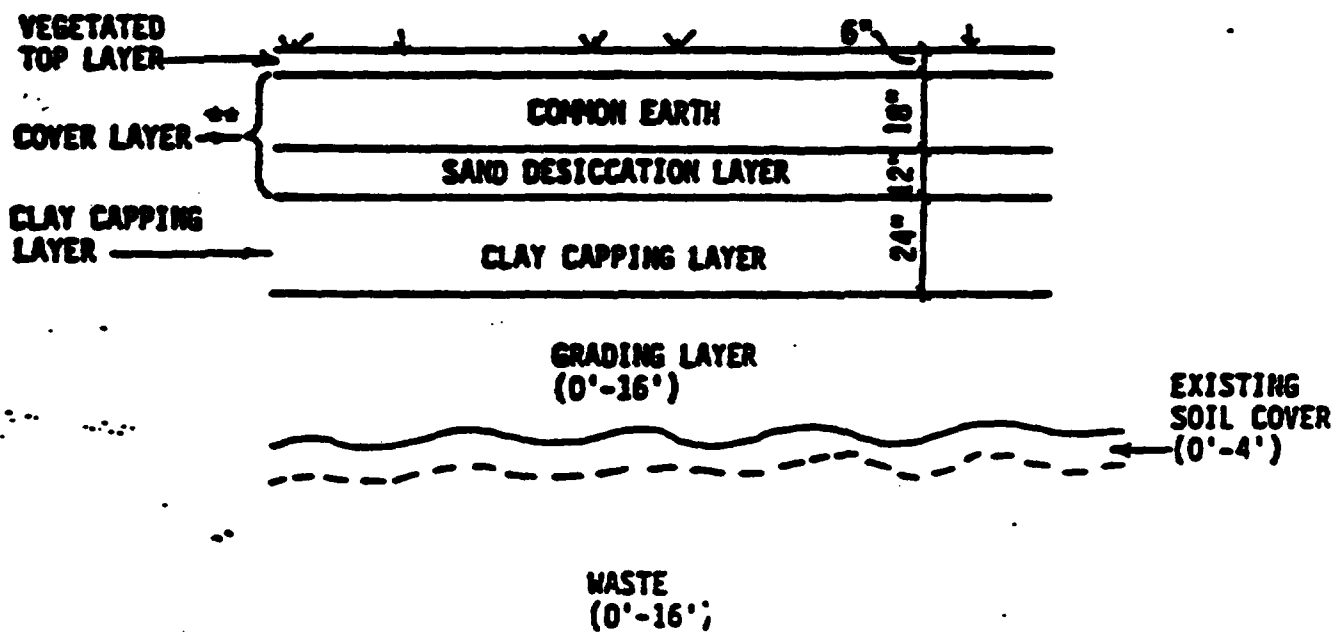


FIGURE 4

SPECIFICATION OF NR 504.07 SOLID WASTE CAP



** THE COVER LAYER WAS SPECIFIED AT 30 IN. AS A WORST CASE SCENARIO TO ADDRESS THE CONCERNS OF NR 504.07 (5).

SCALE: 1" =

WARZYN

STRUCTURE OF SUBTITLE D CAP (NR 500)
PER NR 504.07

REMEDIAL INVESTIGATION AND
FEASIBILITY STUDY

Drawn

W. Hill

Checked

MAZ

App'd

GEA

Revisions

TABLE 1

**Groundwater Quality Summary
VOCs and Semi-VOCs at Source Characterization Wells
Hagen Farm FS**

Concentrations (ug/L)

	<u>Maximum</u>	<u>Average(1)</u>	<u>No. Wells With Detection(2)</u>
<u>VOCs</u>			
2-Butanone	4,400,000	2,620	3
Toluene	20	20	1
Ethylbenzene	2,400	99	3
Xylenes	35,000	1,066	5
Tetrahydrofuran	630,000	5,695	5
<u>Semi-VOCs</u>			
Benzoic Acid	29,000	780	2
2,4-Dimethylphenol	330	153	2
4-Methylphenol	6,100	243	2
Phenol	5,600	3,816	1
1,4-Dichlorobenzene	10	10	1
Benzyl Alcohol	26	26	1
Bis(2-Chloroisopropyl)Ether	19	19	1
Naphtalene	8	8	1
4-Chloro-3-Methylphenol	7	7	1
Diethylphthalate	5	4.5	1
Bis(2-Ethylhexyl)Phthalate	34	18	3
Di-n-Octyl Phthalate	5	5	1

Notes

- (1) Geometric averages for positive detects at each well are calculated for duplicate analysis and multiple rounds, where applicable. Geometric average were then calculated using one single or, where more than one sample was obtained from a given well, average value for each well (5 wells).
- (2) Out of five wells. Some wells had more than one sample analyzed as indicated in (1).

**TABLE 2
(Continued)**

<u>Compound</u>	<u>Concentration</u>		<u>Number of(1) Samples</u>
	<u>Geometric Mean</u>	<u>Maximum</u>	
<u>Pesticide/PCB's (ug/kg)</u>			
Dieldrin	11.6	11.6	1
4,4'-DDE	18.2	18.2	1
4,4'-DDD	11.9	128	4
4,4'-DDT	19.2	19.2	1
PCB-1242	104.8	284	4
PCB-1248	338	338	1
PCB-1254	222	222	1

Notes

(1) Out of 10 total sampling locations (Test Pits RS01 to RS10), excluding RS08 duplicate.

(2) Sum of tentatively identified compounds.

* Indicates concentration is below method quantitation limit. Value is estimated.

**RESPONSIVENESS SUMMARY
HAGEN FARM SITE
SOURCE CONTROL OPERABLE UNIT
DANE COUNTY, WISCONSIN**

PURPOSE

This responsiveness summary, required by the Superfund Law, provides a summary of citizen's comments and concerns identified and received during the public comment period, and U.S. EPA's responses to those comments and concerns. All comments received by U.S. EPA during the public comment period will be considered in the selection of the remedial alternative for the site. The responsiveness summary serves two purposes: It provides U.S. EPA with information about community preferences and concerns regarding the remedial alternatives, and it shows members of the community how their comments were incorporated into the decision-making process.

This document summarizes one written comment received during the public comment period of July 11 to August 10, 1990. The public meeting was held at 7:00 p.m. on August 2, 1990 at Dunkirk Town Hall, Stoughton, Wisconsin. No comments were submitted during the public meeting.

OVERVIEW

The preferred alternative for the Hagen Farm site was announced to the public just prior to the beginning of the public comment period. The preferred alternative includes:

- * Installation of a WDNR required NR 504 solid waste cap over disposal area A after consolidation;
- * In-Situ Vapor Extraction of the waste refuse and sub-surface soils in disposal area A;
- * Off-gas treatment through carbon adsorption.

PUBLIC COMMENT AND AGENCY RESPONSE

COMMENT: It is unwise to spend more than \$2 million of the taxpayers' money to remediate the Hagen Farm site which will not affect anyone. The money should be spent to control cigarette smoking which kills thousands of people each year. In addition, the commentor stated U.S. EPA should be active in alleviating "drunk drivers."

RESPONSE: It is believed that the wastes in the Hagen Farm landfill have been contaminating the groundwater at the site. If the Agency does not remediate this contaminated landfill now, the landfill would contaminate the groundwater continuously in the future, and people who use this groundwater as their drinking

FINAL

ADMINISTRATIVE RECORD INDEX HAGGS FARM SITE STROVETON, GLoucestershire

INDEX	PAGES	DATE	TITLE	AUTHOR	RECIPIENT	DOCUMENT TYPE	DOCUMENT
26	80/01/23		Letter re: Comments on Site Evaluation Report, Technical Description, and GAPP	J. Ballotti, USEPA	R. DeBottista, USEPA of Correspondence		1
12	80/06/23		Letter forwarding responses to the Haggs Farm Site RI/TS GAPP, with the Chloride and Sulfate Analysis by Ion Chromatography	A. Sedlac, Source Inc.	J. Sedlac, Source Inc. of Correspondence		2
1	80/06/30		Letter re: Responses and Revisions to Comments from USEPA-Region V QA Office on the Haggs Farm RI/TS GAPP	J. Borden, USEPA of RI, Inc.	S. Sylvester, USEPA	Correspondence	3
3	80/08/11		Letter re: Availability of Detector Response for Chloride and Sulfate Analyses	G. Ashbury, Waste Eng. Source Engineering, Inc.	Cheng-Yen Tsai, PhD, USEPA	Correspondence	4
3	80/09/06		Letter re: Methodology Modifications for Sulfate and Chloride Analyses	G. Ashbury, Source Engineering, Inc.	J. Lee, USEPA	Correspondence	5
7	80/10/25		Letter re: Work Plan Addendum for Source Characterization	J. Borden, Waste Eng. of RI, Inc.	J. Lee, USEPA	Correspondence	6
2	80/11/10		RI/TS GAPP Sign-off Sheet	J. Borden, USEPA of RI, Inc.	J. Lee, USEPA	Correspondence	7
20	80/07/20		Letter re: Work Plan Addendum for Phase 2 Site Investigation and Source Control Operable Unit 23	G. Ashbury, Source Engineering, Inc.	J. Lee, USEPA	Correspondence	8
23	80/07/25		Letter re: Response to Comments - Tech Note 1	G. Ashbury, Source Engineering, Inc.	J. Borden, USEPA of RI, Inc.	Correspondence	9



State of Wisconsin / DEPARTMENT OF NATURAL RESOURCES

Carol D. Booday, Secretary
Box 782
Madison, Wisconsin 53703
DNR TELEFAX NO. 608-267-957
TDD NO. 608-267-959
SOLID WASTE TELEFAX NO. 608-267-978

September 6, 1990

IN REPLY REFER TO: -4440

Mr. Valdas V. Adamkus, Regional Administrator
U.S. Environmental Protection Agency
230 S. Dearborn Street
Chicago, IL 60604

O: WMD
CC: RF
FREEMAN

SUBJECT: Selected Superfund Remedy
Hagen Farm Site
Dunkirk Township, Dane County, WI

Dear Mr. Adamkus:

The Department is providing you with this letter to document our position on the proposed source control operable unit for the Hagen Farm Site. The proposal, as identified in the draft Record of Decision, includes the following:

Alternative 3: In-Situ Vapor Extraction and Capping

Non-native waste materials from disposal areas B and C would be consolidated to disposal area A. The waste and contaminated sub-soil materials in disposal area A would be treated using In-Situ Vapor Extraction (ISVE). A low permeability cap meeting the Wisconsin requirements for capping municipal landfills will be placed over disposal area A.

Estimated Costs: Construction - \$2,679,400
Operation and Maintenance - \$29,530
30 Year Present Worth - \$3,299,000

The total 30 year present net worth for the Hagen Farm Source Control Operable Unit is approximately \$3,299,000. The Department concurs with Alternative 3, as described in the Record of Decision for this operable unit.

RECEIVED

SEP 12 1990

**ADMINISTRATIVE RECORD INDEX
HAGEN FARM SITE
STOUGHTON, MASSACHUSETTS**

DATE	PAGES	TITLE	ORIGIN	RECIPIENT	DOCUMENT TYPE	DOCUMENT
		For the Analysis for Hazardous Substances List Volatile Organic Compounds in Air Samples by GC/MS	provided by ERI/PA			
238	04/03/81	Report on the Electro-magnetic and Magnetic Survey Conducted at the Hagen Farm Site	From Applied Technology	Harrys Engineering, Inc.	Reports/Studies	22
9	06/03/82	Preliminary Health Assessment for Hagen Farm Site Stoughton, MA	WHO, Div. of Health, Bureau of Community Health and Prevention	ERI/PA	Reports/Studies	23
227	09/03/84	RI/TS Hagen Farm Site Technical Memorandum Number 1 - March 1983	Harrys Engineering, Inc.	Waste Mgmt. of RI, Inc.	Reports/Studies	24
87	09/03/84	RI/TS Hagen Farm Site Technical Memorandum Number 1	Harrys Engineering, Inc.	Waste Mgmt. of RI, Inc.	Reports/Studies	25
4	09/07/84	Progress Report Hagen Farm Superfund Site	ERI/PA		Reports/Studies	26
65	09/10/84	Alternatives Array Document Source Control Operable Unit RI/TS Hagen Farm Site	Harrys Engineering, Inc.		Reports/Studies	27
224	09/02/89	RI/TS Hagen Farm Site Technical Memorandum Number 2	Harrys Engineering, Inc.	Waste Mgmt. of RI, Inc.	Reports/Studies	28

Appendix II
Administrative Record Index

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ADMINISTRATIVE RECORD INDEX PAGE TWO SIX STROSCOT, WISCONSIN

LET	PAGES	DATE	TITLE	STROSCOT	STROSCOT	STROSCOT	STROSCOT	STROSCOT
26		08/01/73	Letter re: Comments on Site Evaluation Report, Technical Workshop, and QAPP	J. Ballozi, US EPA	J. DeBattista, US EPA of Correspondence			1
32		08/06/73	Letter forwarding responses to the Super Fund Site RI/TS QAPP, with the Chloride and Sulfate Analysis by Ion Chromatography	A. Bodine, Bascos Inc.	J. Bodine, Bascos Inc. Correspondence			2
3		08/06/73	Letter re: Responses and Revisions to Comments from US EPA-Region V QA Office on the Super Fund RI/TS QAPP	J. Borden, US EPA of RI, Inc.	J. Sylvester, US EPA	Correspondence		3
3		08/08/73	Letter re: Linearity of Detector Response for Chloride and Sulfate Analyses	G. Ashbury, H. Wendt, Warrzy Engineering, Inc.	Cheng-Hua Yasi, PhD, US EPA	Correspondence		4
3		08/09/73	Letter re: Methodology Modifications for Sulfate and Chloride Analyses	G. Ashbury, Warrzy Engineering, Inc.	J. Lee, US EPA	Correspondence		5
7		08/10/73	Letter re: Work Plan Addendum for Source Characterization	J. Borden, Waste Syst. of RI, Inc.	J. Lee, US EPA	Correspondence		6
2		08/11/73	RI/TS QAPP Sign-off Sheet	J. Borden, US EPA of RI, Inc.	J. Lee, US EPA	Correspondence		7
20		09/07/73	Letter re: Work Plan Addendum for Phase 2 Site Investigation and Source Control Operable Unit 2	G. Ashbury, Warrzy Engineering, Inc.	J. Lee, US EPA	Correspondence		8
23		09/07/73	Letter re: Response to Comments - Tech Memo 1	G. Ashbury, Warrzy Engineering, Inc.	J. Borden, US EPA of RI, Inc.	Correspondence		9

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ADMINISTRATIVE RECORD INDEX

HAZEN POND SITE

STOUGHTON, MASSACHUSETTS

IN PAGE NO.	TITLE	AUTHOR	DATE/ISSUE	DOCUMENT TYPE	DOCUMENT NO.
	For the Analysis for Hazardous Substances List Volatile Organic Compounds in Air Samples by GC/MS	provided by USEPA			
220	01/03/01	Report on the Electro-Magnetic and Magnetic Survey Conducted at the Hazen Pond Site	From Applied Technology Services Engineering, Inc.	Reports/Studies	22
9	01/03/01	Preliminary Health Assessment for Hazen Pond Site Stoughton, MA	USEPA, Div. of Health, Bureau of Community Health and Prevention	Reports/Studies	23
327	03/03/00	RI/TS Hazen Pond Site Technical Memorandum Number 1 - March 1989	Waste Mgmt. of RI, Inc.	Reports/Studies	24
37	03/03/00	RI/TS Hazen Pond Site Technical Memorandum Number 2	Waste Mgmt. of RI, Inc.	Reports/Studies	25
	03/07/00	Progress Report Hazen Pond Superfund Site	USEPA	Reports/Studies	26
	03/10/00	Alternatives Array Document Source Control Operable Unit RI/TS Hazen Pond Site	Waste Mgmt. of RI, Inc.	Reports/Studies	27
4	04/02/00	RI/TS Hazen Pond Site Technical Memorandum Number 3	Waste Mgmt. of RI, Inc.	Reports/Studies	28

Appendix III
Scope of Work (SOW)

Scope Of Work For
The Remedial Design and Remedial Action Work Plan
at the Hagen Farm Site,
Dane County, Wisconsin

I. PURPOSE

The purpose of the Scope of Work ("SOW") is to implement the Hagen Farm site, Source Control Operable Unit, Record of Decision ("ROD") which the United States Environmental Protection Agency ("U.S. EPA") issued in September 1990 to select a source control remedial action for the Hagen Farm Superfund site. In designing and implementing the remedial action at the Hagen Farm site, the Respondents shall follow this SOW, the U.S. EPA Superfund Remedial Design and Remedial Action Guidance, the ROD, the approved Remedial Design ("RD") and Remedial Action ("RA") (sometimes referred to together as "RD/RA") Work Plans, any additional guidance provided by U.S. EPA, and the provisions of the Administrative Order.

II. DESCRIPTION OF THE REMEDIAL ACTION

The Hagen Farm site (the "Site") consists of three disposal areas. In general, the remedial action which the Respondents shall take with respect to the Site shall pertain to the three designated disposal areas which are identified in Figure 1 attached hereto: Area A, Area B, and Area C.

Two operable units have been defined for the Site. Operable unit I, which is the Source Control Operable Unit ("SCOU"), is intended to address waste refuse and sub-surface soils at disposal area A and the two smaller disposal areas B and C. Operable unit II, which is the Groundwater Control Operable Unit ("GCOU"), is intended to address the contaminated groundwater at the Site. This SOW details the work that is required in connection with the SCOU.

The major components of the remedial action for the Site that shall be designed and implemented by the Respondents are the following: Waste Consolidation; Landfill Cover; In-situ Vapor Extraction of Waste Refuse and sub-Surface Soils. The Respondents are required to initiate and/or accomplish these remedial actions within the time periods specified herein and are required to submit reports as identified in Section III below.

The standards and specifications for each component of the remedial action which the Respondents shall implement are as follows:

(1) Cleanup Standard

A. Cleanup Standard for the Waste and Sub-Surface Soils

1. The Respondents shall design, construct, operate, implement and maintain an In-situ Vapor Extraction ("ISVE") cleanup action in the contaminated Waste Refuse and sub-Surface Soils ("Waste/sub-Soils") of disposal area A (which area is identified in Figure 1 attached to the SOW). The Respondents shall operate the ISVE systems until the soil-gas cleanup standards specified pursuant to paragraph A.2., below, are met in the

contaminated Waste/sub-Soils. The Respondents shall use the soil-gas as the medium to determine the Cleanup Standard for the Site.

2. The Respondents shall fully operate, maintain, and implement the ISVE systems for at least two (2) years based on the design parameters specified by U.S. EPA after the Pilot-Scale Test. Within ninety (90) days after the two year anniversary of the commencement of full-scale operation of the ISVE system, the Respondents shall submit to U.S. EPA a state-of-the-art Groundwater/Soil-gas Model (the "Model") for each Volatile Organic Compound ("VOC") detected in the Waste/sub-Soils and/or the groundwater during the remedial investigation ("RI") to provide U.S. EPA with the data on which to base a soil-gas cleanup level in the Waste/sub-Soils. The Model shall be used to determine the concentration of VOCs in the Waste/sub-Soils necessary to achieve the protective level of VOCs in the groundwater, as will be determined in the Record of Decision to be developed in connection with the Groundwater Control Operable Unit. The Respondents shall utilize all of the data produced during the Pilot-Scale Test, the two-year period of full-scale ISVE operation, as well as all previous sampling and monitoring activities to develop the Model. The soil-gas cleanup level designated by the U.S. EPA, to be determined based upon the Model, and the underlying data developed in connection with the formulation of the Model, and the clean-up level determined in the Record of Decision for the Groundwater Control Operable Unit must be achieved in order to eliminate source area contaminant loading to the aquifer, and is intended to assure that the Cleanup Standards for the Groundwater are met.

In the event that the Respondents can establish to the satisfaction of the U.S. EPA, in consultation with the State, that it is appropriate for Respondents to develop and submit the Model to U.S. EPA before the two-year anniversary deadline specified above, then the Respondents shall submit the Model upon receipt of written approval from U.S. EPA. At the time the Respondents request approval to submit the Model prior to the two-year anniversary deadline, Respondents shall submit to U.S. EPA and the State all data relied upon by the Respondents to support their belief that such early submission is appropriate, as well as any other data requested thereafter by U.S. EPA, in consultation with the State.

3. Upon receipt of the state-of-the-art Model, the assumptions used for the Model, the data utilized to develop the Model, and the resulting soil-gas concentration for each VOC determined by the Model, the U.S. EPA, in consultation with the State, will review the Model and the resulting soil-gas concentrations to determine whether the model-produced soil-gas concentrations are appropriate for use as the Cleanup Standard for the contaminated Waste/sub-Soils. If the U.S. EPA, in consultation with the State, finds that the selection and/or use of the Model, the assumed input parameters, the data relied upon, and the resultant soil-gas concentration for each VOC are inappropriate or inadequate, then within thirty (30) days after receiving written comments from the U.S. EPA (prepared in consultation with the State) the Respondents shall revise or reselect or reperform the Model according to the review comments provided by the U.S. EPA, and shall submit to the U.S. EPA for approval, in consultation with the State, the revised Model. If the U.S. EPA, in consultation with the State, requests that more data be developed by the Respondents in order to perform the Model, the Respondents shall conduct

such additional sampling or monitoring activities as requested by the U.S. EPA, in consultation with the State.

If the revised groundwater/soil-gas Model, the assumed Model parameters, the resultant soil-gas concentration, and the additional sampling or monitoring data are not approved by the U.S. EPA, in consultation with the State, then the U.S. EPA, in consultation with the State, shall provide the type of the Model, the assumed model-parameters, and the resultant soil-gas concentration to the Respondents as the Cleanup Standard for the Site. The soil-gas concentration provided by the U.S. EPA, in consultation with the State, shall be used as the Cleanup Standard for the contaminated Waste/sub-Soils.

U.S. EPA, in consultation with the State, has the sole discretion to determine the soil-gas Cleanup Standard.

The Settling Defendants shall operate, maintain, and implement the ISVE system until they achieve the level of reduction of VOCs determined to be the Cleanup Standard.

B. Determination of Final soil-gas concentration of VOCs

No less than ninety (90) days prior to commencing the sampling necessary to determine the final soil-gas concentration of the VOCs in the Waste/sub-Soils within disposal area A, Respondents shall submit to U.S. EPA and the State, for approval by U.S. EPA, in consultation with the State, a Field Sampling Plan and Quality Assurance Project Plan (QAPP) for the determination of such final Soil-gas concentration of VOCs. The Field Sampling Plan shall at a minimum include the duration and frequency of sampling activity, the vertical and horizontal locations of sampling, the method of sampling and analysis, the compounds to be analyzed, and the method to compute the final soil-gas concentration for each VOC. In the event that the Respondents determine that it is necessary to temporarily shutdown the operation of the ISVE system in order to collect samples in connection with determining the final soil-gas concentration for VOCs in the Waste/sub-Soils within disposal area A, then the Respondents shall first obtain the approval of the U.S. EPA, in consultation with the State, for such temporary shutdown. Immediately upon completion of such sampling, the Respondents shall reactivate the ISVE system. Upon approval of the Field Sampling Plan and QAPP by U.S. EPA, in consultation with the State, the Respondents shall implement the sampling and testing required under the Field Sampling Plan. The Respondents shall prepare a Final Soil-gas Report, which shall be submitted to U.S. EPA and the State, for approval by U.S. EPA (in consultation with the State), detailing the results of the field sampling and monitoring analysis. Upon request of U.S. EPA or the State, Respondents shall submit to U.S. EPA and the State the test results and underlying data compiled in connection with the sampling and testing performed pursuant to the Field Sampling Plan. The Final Soil-gas Report shall document the final soil-gas concentration of each VOC in the Waste/sub-Soils at disposal area A.

C. Pilot-Scale Test

After excavation of the non-native materials from disposal areas B and C and consolidation of such materials in disposal area A (pursuant to Section II(2), below, of the SOW), and after construction of the landfill cover (pursuant to Section II(3), below, of the SOW), but prior to full-scale implementation of the ISVE system, the Respondents shall design and implement a pilot-scale test of ISVE of the VOCs in disposal area A (the "Pilot-Scale Test"). The Respondents, pursuant to the time table established in Section IV, below, of the SOW, shall submit, to U.S. EPA and the State, a work plan for conducting the Pilot-Scale Test for ISVE, which is subject to approval by U.S. EPA, in consultation with the State. The work plan shall include, at a minimum, the location within disposal area A where the Pilot-Scale Test is to be conducted, the operation parameters, i.e., number of extraction wells, pumping rate, etc., to be used during the Pilot-Scale Test, and the time necessary to conduct and complete the Pilot-Scale Test. The work plan shall be approved by the U. S. EPA, in consultation with the State. At the conclusion of the Pilot-Scale Test, the Respondents shall present the results of the Pilot-Scale Test to the U.S. EPA and the State. The underlying data developed during the Pilot-Scale Test shall be made available to the U.S. EPA and the State promptly at the request of the U.S. EPA or the State. The Pilot-Scale Test shall determine the most efficient design parameters for full-scale implementation of ISVE in disposal area A. The design parameters shall include, at a minimum, the number of extraction and injection wells, spacing between wells, extraction pumping rate, and off-gas treatment requirements.

The Respondents shall conduct sampling activities to characterize the physical parameters of the Waste/sub-soils, including, but not limited to, moisture content, grain size distribution, and total organic carbon. As part of the Pilot-Scale Test Work Plan, Respondents shall include the sampling plan necessary to conduct this sampling activity.

(2) Waste Consolidation

The Respondents shall excavate the non-native materials, which includes municipal wastes and associated contaminated soils, as well as any industrial debris which may be found, from disposal areas B and C (which is identified in Figure 1 attached to the SOW). The excavated materials shall be consolidated in disposal area A. Prior to commencing excavation, the Respondents shall develop and submit to the U.S. EPA for approval, in consultation with the State, a Field Operating Plan which shall include, at a minimum, the exact boundaries of disposal areas B and C to be excavated, the method of defining the non-native materials excavated from disposal area B and C, the location within disposal area A where the excavated materials are to be consolidated, and the method to be used to fill and landscape (with vegetation native to the area) the excavated depression areas within disposal areas B and C. The Respondents shall commence the waste consolidation activity within thirty (30) days after receiving from U.S. EPA, in consultation with the State, approval of the Field Operating Plan.

The Respondents shall also develop and submit to the U.S. EPA for approval, in consultation with the State, a Contingency Plan to deal with

discovery of unexpected wastes, such as barrels of solvents, contaminated waste, or contaminated soils, during the excavation of disposal areas B and C.

(3) Landfill Cover

The Respondents shall design, install, operate, and maintain a landfill cover in the disposal area A in order to reduce or minimize release of contaminants to the groundwater. The landfill cover shall be designed and installed to meet or exceed the requirements of Wisconsin Administrative Code NR 504.07(1)-(7). The landfill cover shall include (from top to bottom):

- The top layer shall consist of a vegetative layer a minimum of 6 inches thick that will sustain plant growth and will reduce erosion and promote drainage
- A soil layer a minimum of 18 inches thick
- A gravel drainage layer a minimum of 1.0 foot thick that will minimize infiltration into the low permeability layer
- The bottom layer shall be a low permeability, compacted clay layer that minimizes infiltration. This layer shall be a minimum of 2.0 feet thick and shall have a maximum hydraulic conductivity of 1×10^{-7} cm/s

The landfill cover shall be constructed after the consolidation of the non-native materials from areas B and C within area A, but prior to the Pilot-Scale Test (Section II(1)(D), above) and full-scale implementation of ISVE discussed in Section II(4), below. The Respondents shall maintain the integrity of the landfill cover during the ISVE Pilot-Scale Test and implementation of the ISVE cleanup action.

The Respondents shall develop and submit to the U.S. EPA for approval, in consultation with the State, a Sampling and Testing Plan to test clay materials for hydraulic conductivity. The Sampling and Testing Plan shall also include the source and type of clay materials that shall be used for the landfill cover. The Respondents shall conduct such sampling and testing within thirty (30) days after receiving from U.S. EPA, in consultation with the State, approval of the Sampling and Testing Plan.

Upon written request of the U.S. EPA, in consultation with the State, the Respondents shall initiate construction of the landfill cover after submitting to U.S. EPA the prefinal design, but before submission and approval of the final design.

(4) Implementation of In-situ Vapor Extraction of Waste Refuse and Sub-Surface Soils

Subsequent to the excavation and consolidation of non-native materials from disposal areas B and C to disposal area A, and installation of the landfill cover over disposal area A, the Respondents shall implement an ISVE system in order to cleanup the contaminated Waste/sub-Soils within disposal

area A. The ISVE system shall consist of installation of extraction and injection wells for the Waste/sub-Soils area, and treating off-gas which is emitted from the extraction wells. The ISVE shall be preceded by a Pilot-Scale Test (see Section II(1)(C), above) prior to full-scale implementation.

A. Full-scale ISVE Implementation

After the completion of the Pilot-Scale Test, the Respondents shall implement the full-scale ISVE of the Waste/sub-Soils in disposal area A until the Waste/sub-Soils Cleanup Standard identified in Section II(1)(A), above, is met. During the course of the ISVE implementation, if either the Respondents or U.S. EPA determine that the removal of VOCs can be enhanced by pulsing either the entire ISVE system or individual wells, U.S. EPA may, at its option, require the Respondents to operate the system in that manner.

During the first six months after initiating the full-scale ISVE system, the Respondents shall perform a study to examine the feasibility of adding essential nutrients (e.g., moisture, nitrogen, and phosphate) to the Waste/sub-Soils in disposal area A in order to enhance the natural microbial degradation of organic compounds (the "Feasibility Test"). The Feasibility Test shall be subject to the supervision and review of the U.S. EPA, in consultation with the State. The objective of the Feasibility Test is to determine the optimum amounts of nutrients to be added to the Waste/sub-Soils in order to promote the natural microbial activities, without decreasing the effectiveness of the removal of the VOCs by ISVE. At the conclusion of the Feasibility Test period, the Respondents shall present the results of this study to the U.S. EPA and the State in the form of a written report. The underlying data developed during the Feasibility Test shall be made available to the U.S. EPA and the State at the request of the U.S. EPA or the State. Based on the results of the Feasibility Test, U.S. EPA, in consultation with the State, may require the Respondents to implement the addition of essential nutrients to the Waste/sub-Soils.

The Respondents shall describe the method of conducting the Feasibility Test in the Remedial Design.

B. Off-gas Treatment

The Respondents shall design, construct, operate, and maintain a carbon adsorption system to treat off-gases emitted from the extraction wells both during the pilot-scale test and the full-scale implementation of ISVE. The Respondents shall treat off-gas emitted from the extraction wells using a carbon adsorption system in order to meet the requirements of the Wisconsin Administrative Code, NR 445, Control of Hazardous Pollutants. The Respondents shall submit to the U.S. EPA and the State the air emission monitoring program, specifying the frequency, duration, and compounds to be analyzed. Such program shall be subject to approval by the U.S. EPA, in consultation with the State.

The Respondents shall send the spent carbon or other residues produced from off-gas treatment back to the manufacturer to be regenerated.

C. Notification of Temporary ISVE Shutdown

If, for any reason during the period of operation of the ISVE system, including the Pilot-Scale Test period, the operation of the ISVE system is interrupted or stopped, whether due to mechanical failure, human error, or any other reason (except for routine maintenance), then the Respondents shall notify the U.S. EPA and the State of such interruption or cessation of operation within twenty-four (24) hours after learning thereof. Such notification may initially be given orally, but must be confirmed in writing within five days after the date on which the oral notification is given. The Respondents shall notify U.S. EPA and the State of the nature and cause of the interruption or cessation of operation, as well as the estimated length of time before the operation of the ISVE system will be resumed.

If, for any reason during the period of operation of the ISVE system, including the Pilot-Scale Test period, the Respondents determine that it is necessary to temporarily interrupt the operation of the ISVE system in order to perform routine maintenance on the system (i.e., replace spent carbon, parts, or any other necessary maintenance), then the Respondents shall give U.S. EPA and the State a minimum of forty-eight (48) hours notice, in writing, prior to such shutdown. The Respondents shall notify the U.S. EPA and the State of the nature of the maintenance to be performed, as well as the estimated length of time before the operation of the ISVE system will be resumed.

In all cases where there is an interruption or cessation in the operation of the ISVE system, whether due to mechanical failure, human error, or to perform routine maintenance, as well as any other reason, the Respondents shall use their best efforts to repair, complete maintenance, or take any other steps necessary to timely resume the operation of the ISVE system.

D. Termination of Operation

The Respondents shall operate the ISVE system until the Waste/sub-Soils Cleanup Standard is met. Upon achieving the Cleanup Standard, Respondents shall submit to U.S. EPA and the State for review and approval by U.S. EPA, in consultation with the State, a Draft Remedial Action Report containing the data establishing that the Cleanup Standard has been achieved. Respondents may terminate the operation of the ISVE system only upon the express written approval of the U.S. EPA, in consultation with the State. Upon termination of the ISVE system, Respondents shall remove all equipment used at the Site in connection with the ISVE system, and shall fill and grade all well extraction points, trenches, etc., prepared in connection with the operation of the ISVE system.

(5) Fence Installation

The Respondents shall implement and maintain fencing of the Site to reduce risks which may be posed to public health due to construction activity or exposure to hazardous chemicals at the Site during the cleanup process and to also protect treatment equipment from vandalism. The fence shall consist

of a six-foot high chain link perimeter fence topped with three-strand barbed wire. The fence shall enclose disposal areas A, B, and C shown in Figure 1, and shall be equipped with a swing gate at the entrance to the access road. Standard Superfund warning signs shall be posted at 200-foot intervals along the fence and on the gate. Once the operation has been terminated, the Site shall be sufficiently fenced to prevent its further use as a dump or motorized vehicle track, but not to restrict pedestrian or wildlife access.

(6) Institutional Controls

The Respondents shall continue to comply with State regulations prohibiting future development of the Site, as set forth in Section NR 504.07(8) (a-c), WAC, and in Section NR 506.08(5), WAC as well as the State regulations prohibiting the installation of drinking water wells within 1200 feet of a landfill, as set forth in Section NR 112.08(4)(g), WAC.

Within 60 days after receiving the Administrative Order in this matter, the Owner Respondent shall file deed restrictions with register deed for Dane County, Wisconsin applicable to all property owned by Owner Respondent at the Site prohibiting: 1) any consumptive or other use of the groundwater underlying the Site that could cause exposure to humans or animals; 2) any use of, or activity, at the Site that may interfere with the work to be performed at the Site as required by the Administrative Order; and 3) any residential or commercial use of the Site, including but not limited to any filling, grading, excavating, building, drilling, mining, farming, or other development, or placing waste material at any portion of the Site, except with the approval of U.S. EPA, in consultation with the State, as consistent with the requirements of the Administrative Order.

Within 60 days after receiving the Administrative Order in this matter, the Respondents shall obtain all additional easements, deed restrictions, land use limitations, or other enforceable instruments restricting private property use necessary to prevent interference with and complete the work on property other than that owned by Owner Respondent at the Site.

(7) Access

Respondents shall secure access to the Site for the purpose of implementing work required by the Administrative Order and this SOW, including the installation and operation and maintenance of the cap, Site fence, ISVE, excavation for sampling, extraction, and treatment, on those portions of the Site or its surroundings not presently owned by Respondents, as well as those portions owned by Respondents. Access to the Site and any other property to which access is necessary to implement this SOW shall be provided for representatives of the Respondents, as well as U.S. EPA and the State and their contractors or representatives.

III. SCOPE

The RD and RA Work Plan shall consist of four tasks:

Task I: RD and RA Work Plan

Task II: Remedial Design

- A. Design Plans and Specifications
- B. Operation and Maintenance Plan
- C. Cost Estimate
- D. Project Schedule
- E. Construction Quality Assurance Objectives
- F. Health and Safety Plan
- G. Design Phases
- H. Community Relations Support

Task III: Remedial Action Construction

- A. Responsibility and Authority
- B. Construction Quality Assurance Personnel Qualifications
- C. Inspection Activities
- D. Sampling Requirements
- E. Documentation

Task IV : Reports

- A. Progress
- B. Draft
- C. Final

Task I: RD and RA WORK PLAN

A. RD/RA Work Plan.

The Respondents shall prepare and submit to the U.S. EPA for approval, in consultation with the State, in accordance with the schedule set forth in Part IV below, an RD work plan which describes the overall management strategy for the landfill cover, pilot-scale testing of ISVE in disposal area A, and for the design phase of the overall cleanup remedy. A schedule for Waste/sub-Soils sampling, Waste consolidation, pilot-scale testing, and remedy implementation shall be included in the RD work plan. The RD work plan, which is a portion of the RD/RA work plan, is due within 45 days after receiving of the Administrative Order. The RD work plan shall include, but not be limited to, the following:

1. A Field Operating Plan for Waste Consolidation;
2. A Contingency Plan for Waste Consolidation;
3. A Sampling and Testing Plan for Clay.

The Respondents shall prepare and submit to the U.S. EPA for approval, in consultation with the State, in accordance with the schedule set forth in Part IV below, an RA work plan which shall describe the overall management strategy for performing the construction, operation and maintenance, and monitoring of the remedial action. The plan shall describe the responsibility and authority

of all organizations and key personnel involved with the implementation of the work required under the Administrative Order and this SOW.

Each portion of the RA work plan shall also include the name(s) and a description of qualifications of key personnel directing the RD/RA, including contractor personnel.

Task II: REMEDIAL DESIGN

The Respondents shall prepare and submit to U.S. EPA for approval, in consultation with the State, final construction plans and specifications to implement the Remedial Actions at the Site as defined in the "Purpose" and the "Description of the Remedial Action" section of this SOW.

As indicated in the schedule for the submission of design plans and other documents, Section IV. below, the Respondents are required to submit the design and implementation plans for the landfill cover under a schedule separate and apart from the schedule for the submission of design and implementation of the ISVE system. Each design and implementation submittal shall contain the items described below in Section III.

A. Design Plans and Specifications

The Respondents shall develop and submit to U.S. EPA for approval, in consultation with the State, clear and comprehensive design plans and specifications which include but are not limited to the following:

1. Discussion of the design strategy and the design basis, including:
 - a. Compliance with all applicable and all relevant and appropriate environmental and public health laws, rules, regulations and standards; and
 - b. Minimization of environmental and public impacts.
2. Discussion of the technical factors of importance to the design and construction including:
 - a. Use of currently accepted environmental control measures and technology;
 - b. The constructability of the design; and
 - c. Use of currently acceptable construction practices and techniques.
3. Description of assumptions made and detailed justification of these assumptions;
4. Discussion of the possible sources of error and references to possible operation and maintenance problems;

5. Detailed drawings of the proposed design including;
 - a. Qualitative flow sheets; and
 - b. Quantitative flow sheets.
6. Tables listing equipment and specifications;
7. Tables giving material and energy balances;
8. Appendices including;
 - a. Sample calculations (one example presented and explained clearly for significant or unique design calculations);
 - b. Derivation of equations essential to understanding the report;
 - c. Results of the Waste/sub-Soils Sampling Program; and
 - d. Results of the Pilot-Scale Test.

B. Operation and Maintenance Plan

The Respondents shall prepare and submit to U.S. EPA for approval, in consultation with the State, an Operation and Maintenance Plan to cover both implementation and long term maintenance of the Remedial Actions. The plan shall be composed of the following elements:

1. Description of normal operation and maintenance (O&M), including;
 - a. Description of tasks for operation;
 - b. Description of tasks for maintenance;
 - c. Description of prescribed treatment or operation conditions; and
 - d. Schedule showing frequency of each O&M task.
2. Description of potential operating problems, including;
 - a. Description and analysis of potential operation problems;
 - b. Sources of information regarding problems; and
 - c. Common and/or anticipated remedies.
3. Description of routine monitoring and laboratory testing, including;
 - a. Description of monitoring tasks;

- c. Records for operating costs;
- d. Mechanism for reporting emergencies;
- e. Personnel and maintenance records; and
- f. Monthly/annual reports to State agencies.

An initial Draft Operation and Maintenance Plan shall be submitted by Respondents to U.S. EPA simultaneously with the Prefinal Design Document submission and the Final Operation and Maintenance Plan with the Final Design Documents.

The Respondents shall submit to U.S. EPA for approval, in consultation with the State, updates of the final Operation and Maintenance Plan after construction of each component of the remedial action in order to reflect any changes necessitated by the construction.

C. Cost Estimate

The Respondents shall develop and submit to U.S. EPA for approval, in consultation with the State, cost estimates for the purpose of assuring that the Respondents have the financial resources necessary to construct and implement the Remedial Action. The cost estimate developed in the Feasibility Study shall be refined to reflect the more detailed/accurate design plans and specifications being developed. The cost estimate shall include both capital and operation and maintenance costs. An Initial Cost Estimate shall be submitted simultaneously with the Prefinal Design submission and the Final Cost Estimate shall be submitted along with the Final Design Document.

D. Project Schedule

The Respondents shall develop a Project Schedule for construction and implementation of the Remedial Actions. The Project schedule shall identify timing for initiation and completion of all critical path tasks. Respondents shall specifically identify dates for completion of the project and major interim milestones. An Initial Project Schedule shall be submitted simultaneously with the Prefinal Design Document submission and the Final Project Schedule shall be submitted along with the Final Design Document. The Final Project Schedule is subject to review and approval by the U.S. EPA, in consultation with the State.

E. Construction Quality Assurance Objectives

The Respondents shall identify and document the objectives and framework for the development of a construction quality assurance program including, but not limited to the following: responsibility and authority; personnel qualifications; inspection activities; sampling requirements; and documentation.

F. Health and Safety Plan

The Respondents shall modify and submit to U.S. EPA for approval, in consultation with the State, the Health Safety Plan developed for the RI/FS to address the activities to be performed at the facility to implement the Remedial Action(s).

G. Design Phases

The design of the Remedial Action(s) shall include the phases outlined below.

1. Preliminary design

The Respondents shall submit the Preliminary Design when the design effort is approximately 30% complete. At this stage, the Settling Defendants shall have field verified the existing conditions of the facility. The Preliminary Design shall reflect a level of effort such that the technical requirements of the project have been addressed and outlined so that they may be reviewed to determine if the final design will provide an operable and usable Remedial Action. The Respondents shall provide supporting data and documentation with the Design Documents defining the functional aspects of the program. The preliminary construction drawings by the Respondents shall reflect organization and clarity. The scope of the technical specifications shall be outlined in a manner reflecting the final specifications. The Respondents shall include with their preliminary design submission, calculations reflecting the same percentage of completion as the designs they support.

2. Correlating plans and specifications

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications, the Respondents shall:

- a. Coordinate and cross-check the specifications and drawings; and
- b. Complete the proofing of the edited specifications and the cross-checking of all drawings and specifications.

These activities shall be completed prior to the 95% prefinal submittal to the U.S. EPA and the State.

3. Equipment start-up and operator training

The Respondents shall prepare, and include in the technical specifications governing treatment systems, contractor

requirements for providing appropriate service visits by experienced personnel to supervise the installation, adjustment, start up and operation of the treatment systems, and training covering appropriate operational procedures once the startup has been successfully accomplished.

4. Additional studies

The U.S. EPA, in consultation with the State, may require the Respondents to conduct additional studies to supplement the available technical data. At the discretion and under the direction of the U.S. EPA for any such studies required, the Settling Defendants shall furnish all services, including field work as required, materials, supplies, plant, labor, equipment, investigations, studies and superintendence. The Respondents shall perform sufficient sampling, testing and analysis to optimize the required treatment and/or disposal operations and systems. There shall be an initial meeting of all principal personnel with the Respondents involved in the development of the program. The purpose of the meeting will be to discuss objectives, resources, communication channel, role of personnel involved and orientation of the Site. The interim report shall present the results of the testing with the recommended treatment or disposal system (including options). A review conference shall be scheduled after the interim report has been reviewed by all interested parties. The Respondents' final report of the testing shall include all data taken during the testing and a summary of the results of the studies.

5. Prefinal and Final Design

The Respondents shall submit to the U.S. EPA for approval, in consultation with the State, the Prefinal/Final design documents in two parts. The first submission shall be the "prefinal" submission which shall be submitted at 95% completion of design. After review and approval of the prefinal submission by the U.S. EPA, in consultation with the State, the Respondents shall execute any required revisions and submit the final documents to the U.S. EPA 100% complete with reproducible drawings and specifications.

The Prefinal Design submittal shall contain the Design Plans and Specifications, Operation and Maintenance Plan, Capital and Operating and Maintenance Cost Estimate, Project Schedule, Quality Assurance Project Plan and the Health and Safety Plan.

The Final Design submittal contain the Final Design Plans and Specifications (100% complete), the Respondents' Final Construction Cost Estimate, the Final Operation and

Maintenance Plan, Final Quality Assurance Project Plan, Final Project Schedule and Final Health and Safety Plan. The quality of the design documents should be such that the Respondents would be able to include them in a bid package and invite contractors to submit bids for the construction project.

H. Community Relations Support

A community relations program will be implemented by the U.S. EPA, in consultation with the State. The Respondents shall cooperate with the U.S. EPA and the State by participating in the preparation of all appropriate information disseminated to the public, and in public meetings that may be held or sponsored by the U.S. EPA or the State to explain activities at, or concerning, the Site, including, but not limited to the findings of the Waste/sub-Soils Sampling Program and the Pilot-Scale Test.

The community relations support which the Respondents shall be required to undertake should be consistent with Superfund community relations policy as stated in the "Guidance for Implementing the Superfund Program" and "Community Relations in Superfund - A Handbook".

TASK III: REMEDIAL ACTION CONSTRUCTION

Following U.S. EPA approval of the final design, the Respondents shall develop and implement a construction quality assurance (CQA) program to ensure, with a reasonable degree of certainty, that the completed Remedial Action meets or exceeds all design criteria, plans and specifications. The CQA plan should be prepared specifically for the Hagen Farm Site. This plan shall be submitted to the U.S. EPA for approval, in consultation with the State, prior to the start of the construction. At a minimum, the CQA plan shall include the elements, which are summarized below as Section III Subpart, A through E. Upon U.S. EPA approval of the CQA Plan the Respondents shall construct and implement the Remedial Actions in accordance with the approved design, schedule, and the CQA plan. The Respondents shall also implement the elements of the approved operation and maintenance plan.

A. Responsibility and Authority

For the CQA plan, the Respondents shall describe fully the responsibility and authority of all organizations (i.e. technical consultants, construction firms, etc.) and key personnel involved in the construction of the corrective measure shall be described fully in the CQA plan. The Respondents shall also identify a CQA officer and the necessary supporting inspection staff.

B. Construction Quality Assurance Personnel Qualifications

The qualifications of the CQA officer and supporting inspection personnel shall be presented in the CQA plan in order to demonstrate

that they possess the training and experience necessary to fulfill their identified responsibilities.

C. Inspection Activities

The Respondents shall summarize in the CQA plan the observations and tests that will be used to monitor the construction and/or installation of the components of the Remedial Actions. The plan shall include the scope and frequency of each type of inspection. Inspections shall verify compliance with the environmental requirements and include, but not be limited to, air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests). The inspection shall also ensure compliance with all health and safety procedures. In addition to oversight inspections, the Respondents shall conduct the following activities.

1. Preconstruction inspection and meeting

Prior to initiating or commencing, the Respondents shall conduct a remedial action construction inspection and meeting to:

- a. Review methods for documenting and reporting inspection data;
- b. Review methods for distributing and storing documents and reports;
- c. Review work area security and safety protocol;
- d. Discuss any appropriate modifications of the construction quality assurance plan to ensure that site-specific considerations are addressed; and
- e. Conduct a site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person and minutes shall be transmitted to U.S. EPA and the State within fourteen (14) days after the meeting.

2. Prefinal inspection

Upon preliminary project completion, the Respondents shall notify U.S. EPA for the purposes of conducting a prefinal inspection. The prefinal inspection shall consist of a walk-through inspection of the entire project site. The inspection is to determine whether the project is complete and consistent with the contract documents and the EPA approved Remedial Action. Any outstanding construction items discovered during the inspection shall be identified and noted. Additionally, treatment equipment shall be operationally tested by Respondents. The Respondents shall certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. The prefinal inspection report shall outline

the outstanding construction items, actions required to resolve items, completion date for these items, and date for final inspection.

3. Final inspection

Upon completion of any outstanding construction items, the Respondents shall notify EPA for the purposes of conducting a final inspection. The final inspection shall consist of a walk-through inspection of the project site. The prefinal inspection report will be used as a checklist with the Final inspection focusing on the outstanding construction items identified in the prefinal inspection. Confirmation shall be made that outstanding items have been resolved.

D. Sampling Requirements

The sampling activities, sample size, sample locations, frequency of testing, acceptance and rejection criteria, and plans for correcting problems as addressed in the project specifications shall be presented in the CQA plan.

E. Documentation

Reporting requirements for CQA activities shall be described in detail in the CQA plan. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records shall be presented in the CQA plan.

TASK IV: Reports and Submissions

The Respondents shall prepare and submit to U.S. EPA and the State plans, specifications, and reports as set forth in Tasks I through Task IV to document the design, construction, operation, maintenance, and monitoring of the Remedial Action. The documentation shall include, but not be limited to the following:

A. Progress

The Respondents shall at a minimum provide the U.S. EPA and the State with signed monthly progress reports during the design and construction phases and semi-annual progress reports for operation and maintenance activities containing:

1. A description and estimate of the percentage of the RD/RA completed;
2. Summaries of all findings;
3. Summaries of all changes made in the RD/RA during the reporting period;

4. Summaries of all contacts with representative of the local community, public interest groups, and/or State government during the reporting period;
5. Summaries of all problems or potential problems encountered during the reporting period;
6. Actions being taken to rectify problems;
7. Changes in personnel during the reporting period;
8. Projected work for the next reporting period; and
9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. Draft

1. The Respondents shall submit to U.S. EPA and the State a draft RD Work Plan and a draft RA Work Plan as outlined in Task I;
2. The Respondents shall submit to U.S. EPA and the State draft construction Plans and Specifications, Design Reports, Cost Estimates, Schedules, Operation and Maintenance plans, and Study Reports as outlined in Task II;
3. The Respondents shall submit to U.S. EPA and the State a draft construction Quality Assurance Program Plan and documentation as outlined in Task III; and
4. At the completion of the construction of the project, the Settling Defendants shall submit to U.S. EPA and the State a Remedial Action Implementation Report. The Report shall certify that the project is consistent with the design specifications, and that Remedial Action is performing adequately. The Report shall provide or specifically reference all documents or material which support the statements contained in the Report. The Report shall include, but not be limited to the following elements:
 - a. Synopsis of the Remedial Action and certification of the design and construction;
 - b. Explanation of any modifications to the plans and why these were necessary for the project;
 - c. Listing of the criteria, established before the Remedial Action was initiated, for judging the functioning of the Remedial Action and also explaining any modification to these criteria;

- d. Results of facility monitoring, indicating that the Remedial Action will meet or exceed the performance criteria;
- e. Explanation of the operation and maintenance (including monitoring) to be undertaken at the facility; and

C. Final

The Respondents shall finalize the RD and RA work plans, Design Reports, Construction Plans and Specifications, Cost Estimates, Project Schedule, Operation and Maintenance Plan, Study Reports, Construction Quality Assurance Program Plan/Documentation and the Remedial Action Implementation Report incorporating comments received from U.S. EPA and the State on draft submissions.

IV SUBMISSION SUMMARY

The Respondents' RD and RA work plans shall comply with the following time table information reporting requirements:

<u>Submission</u>	<u>Due Date</u>
Draft RD/RA Work Plan (Task I)	45 days after the receipt of Administrative Order
Final RD/RA Work Plan (Task I)	30 days after U.S. EPA comments on draft RD/RA Work Plan.
Design Phases for Landfill Cover (Task II)	
Prefinal Design (95% completion)	80 days after the receipt of Administrative Order.
Final Design (100% completion)	30 days after U.S. EPA comments on the Prefinal Design
Draft Submittals	Concurrent with Prefinal Design of Landfill Cover.
Construction Designs and Specifications Design Reports Cost Estimates RA Project Schedules Operation and Maintenance Plan Construction Quality Assurance Objectives Health and Safety Plan Operation and Maintenance QAPP	
Final Submittals	Concurrent with Final Design of Landfill Cover.
Construction Designs and Specifications Design Reports Cost Estimates RA Project Schedules Operation and Maintenance Plan Construction Quality Assurance Objectives Health and Safety Plan Operation and Maintenance QAPP	
Draft Construction Quality Assurance Plan (Task III)	Concurrent with Prefinal design of Landfill Cover
Final Construction Quality Assurance Plan	Concurrent with Final design of Landfill Cover
Construction of Remedial Action	As approved in Final Design.
Prefinal Inspection Report	30 days after Prefinal Inspection

Final Inspection Report	30 days after Final Inspection
Draft Remedial Action Implementation Report (Task IV)	Upon completion of construction phase.
Completion of Construction	As approved by U.S. EPA in the RD and RA Work Plans.
Final Remedial Action Implementation Report (Task IV)	30 days after U.S. EPA comment on Draft Remedial Action Implementation Report.
O & M Plan Revision	30 days after Final Remedial Action Implementation Report
Draft Pilot-Scale Test Work Plan for ISVE	45 days after U.S. EPA approval on the final design for Landfill Cover
Final Pilot-Scale Test Work Plan for ISVE	30 days after U.S. EPA comments on Draft Work Plan for Pilot-Scale Test
Draft Pilot-Scale Test Report for ISVE	45 days after completing Pilot-Scale Test activity
Final Pilot-Scale Test Report for ISVE	30 days after U.S. EPA comments on Draft Pilot-Scale Test Report
Design Phases for ISVE (Task II)	
Preliminary Design (30% completion)	60 days after U.S. EPA approval of the Final Pilot-Scale Test Report for ISVE
Prefinal Design (95% completion)	120 days after U.S. EPA approval of the Final Pilot-Scale Test Report for ISVE
Final Design (100% completion)	30 days after U.S. EPA approval of the prefinal design for ISVE
Draft Submittals	Concurrent with Prefinal Design of ISVE.
Construction Designs and Specifications	

Design Reports
 Cost Estimates
 RA Project Schedules
 Operation and Maintenance Plan
 Construction Quality Assurance Objectives
 Health and Safety Plan
 Operation and Maintenance QAPP
 Draft Feasibility Test Plan
 Feasibility Test Plan
 Air Emission Monitoring Program

Final Submittals

Concurrent with Final Design of ISVE.

Construction Designs and Specifications
 Design Reports
 Cost Estimates
 RA Project Schedules
 Operation and Maintenance Plan
 Construction Quality Assurance Objectives
 Health and Safety Plan
 Operation and Maintenance QAPP
 Feasibility Test Plan
 Air Emission Monitoring Program

Draft Construction Quality Assurance Plan (Task III)

Concurrent with Prefinal Design of ISVE

Final Construction Quality Assurance Plan (Task III)

Concurrent with Final Design of ISVE

Construction of Remedial Action

As approved in Final Design.

Prefinal Inspection Report

30 days after Prefinal Inspection

Final Inspection Report

30 days after Final Inspection

Draft Remedial Action Implementation Report (Task IV)

Upon completion of construction phase.

Completion of Construction

As approved by U.S. EPA in the RD and RA Work Plans.

Final Remedial Action Implementation Report (Task IV)

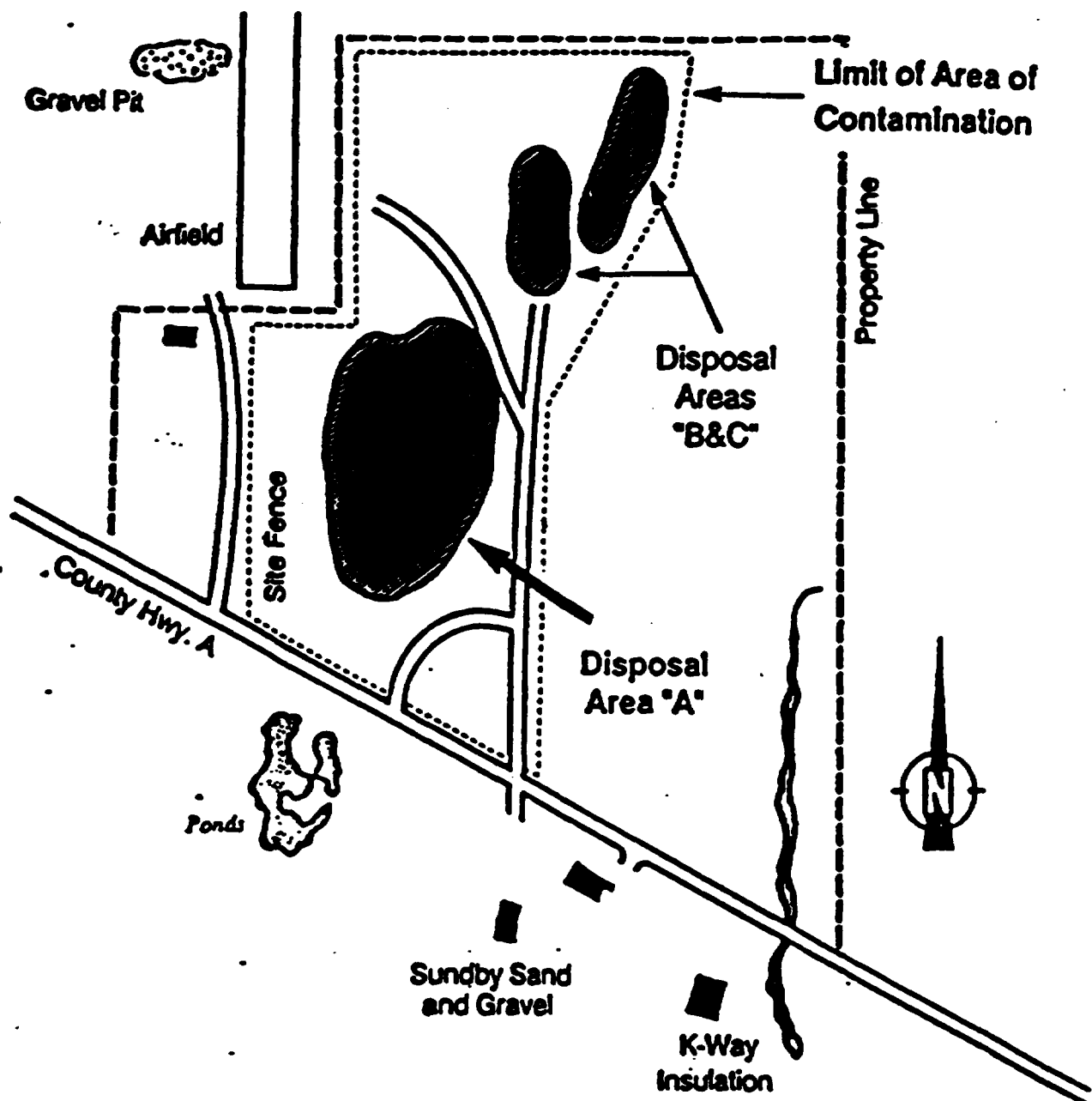
30 days after U.S. EPA comment on Draft Remedial Action Implementation Report.

Feasibility Test Report

30 days after completing Feasibility Test activity

Draft Groundwater/Soil-Gas Model Submittal	Within 90 days after two year anniversary of the commencement of full-scale operation of ISVE
Final Groundwater/Soil-Gas Model Submittal	30 days after U.S. EPA' comments on the Draft Model Submittal
O & M Revisions	30 days after approval of Final Remedial Action Implementation Report.
Draft Field Sampling Plan and QAPP for Final Soil-gas Concentration	No less than 90 days prior to commencing sampling for determination of Final Soil-gas concentration
Final Field Sampling Plan and QAPP for Final Soil-Gas concentration	30 days after U.S. EPA' comments on Draft Field Sampling Plan and QAPP
Draft Remedial Action Report	30 days after achieving the Cleanup Standard
Final Soil-Gas Report	As specified and approved in Final Field Sampling Plan
Final Remedial Action Report	30 days after approval of Draft Remedial Action Report
Progress Reports for Tasks I through IV	Monthly
Progress Reports during Operation and Maintenance	Semi-annually.

Figure 1
Site Diagram
Hagen Farm Site
Dunkirk Township, Wisconsin
 (Not To Scale)



Prepared by Jacobs Engineering Group Inc. Chicago
 for the U.S. Environmental Protection Agency, 7/22/90

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